

ART RECREATIONS

A GUIDE TO DECORATIVE ART

EDITED BY

MARION KEMBLE



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Art Recreations A Guide to Decorative Art.

— Edited by
Marion Kemble.



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S. W. Tilton & Co.

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A

GUIDE TO DECORATIVE ART

EDITED BY

MARION KEMBLE

BOSTON

S. W. TILTON AND COMPANY

c 1884

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NOTE OF EXPLANATION TO THE READER.

ALTHOUGH presenting this book under an old name, it is in reality a new work. The old matter has been much condensed and in many instances entirely rewritten. New matter more in amount than the entire contents of the first edition has been added, and the whole arranged on a system of economy in which it has been our object to show how, at a comparatively small expense, one may make many pretty and decorative articles which, if purchased at the "Art Stores," would be quite expensive.

In all matters pertaining to home decoration — for presents to friends — for fairs and for private exhibition, and for general sale, this book will furnish desirable information and assistance.

The space at our command has not allowed us in all cases to give minute details, but we have selected such subjects for detailed instructions as will give the most general information and which can be applied in many cases where detail has been omitted.

It may be observed that practice in such instructions as we

have given in detail can be had at a very slight expense. Take for instance Pottery Decoration. This subject is treated so minutely in detail as to afford those who have had no previous Art Instruction an opportunity to begin with the first step, *viz.*, drawing, and to practise weeks and even months at a trifling expense, and while learning to decorate pottery they will be acquiring information which will enable them to take up successfully other branches of decorative art.

After learning to draw, a knowledge of colors will be desirable; these are prepared for the painter's use by various processes and applied mixed with some liquid. Various fluids are employed for the purpose, water for water-colors, oil, for oil-colors, etc., etc.

The simplest form of applying colors is with water and will prove the most instructive, the least expensive, and the most artistic.

It will be the most instructive because water-colors being generally transparent, care and judgment must be used in their application as when once laid on they cannot be hidden by covering them with another color as is the case with oil-colors. A coat of blue covered by a coat of yellow will destroy the individuality of each, and produce a green — the colors being transparent, one shows through the

other, giving the same result as though the two had been mixed.

The same experiment with oil-colors will show quite a different result — the one last put on will only appear. The colors being opaque, one covers and hides any previous color. Thus it will be quite evident that in the first case one will learn to study the effect of his colors so as to apply the proper one the first time, while in the other case he will only learn carelessness — it will be so easy to cover up his mistakes. Mixed with water will be the simplest method for applying colors, because in this form they are always ready for immediate use and may be left at any time without injury or waste.

They are the least expensive because a box of good water-colors (Tilton's Decorative Art Color Box No. 1) may be had for half a dollar, while the cheapest box of oils will cost two dollars, and the box of water-colors will outlast several boxes of oils.

After one has learned how to mix and use colors with water, which, as we have shown, may be learned at a trifling expense, he may very easily learn how to use them mixed with any other fluid or medium, as the principle is the same.

In several instances where space would not allow of detail we have referred to other books which will give information on the subject; and in the instructions for Pottery Decoration we have referred to "Bulfinch's Age of Fable." This book, while giving no instructions in any form of art work, should claim especial attention from every art student, as the stories there told have furnished the subjects which have made the reputation of artists, sculptors, and poets, from the most remote period down to the present time. Indeed, many of the most celebrated works of art will be quite unintelligible without a knowledge of the stories told in this book. Besides being one of the most intensely interesting volumes to be found in the English language, it also contains over a hundred fac-simile illustrations of the works of the old masters, including many from pictures found at Herculaneum and Pompeii.

"Artists' Colors, and How to Mix Them," is the title of another book* we have several times referred to; this little work contains over a hundred pages of valuable information on colors, which we would have been glad to have given entire had our space allowed.

MARION KEMBLE.

* Now in preparation.

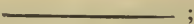



THIS art by which we imitate the beauties of the exterior world, and transfer to paper or canvas the creations of our imagination, is not only a pleasing accomplishment, but of practical utility in every department of human life; and while, as in every branch of study, all cannot expect to attain to equal excellence, there is no one who does not possess within him a germ which, with proper cultivation,

will develop itself in some degree of artistic beauty. As in music, so in drawing, to become a master of the art requires a life-long labor and constant application; and yet it is within the reach of all to acquire such a knowledge, and such an experience, as to produce pleasing effects, to cultivate and elevate our tastes for the beautiful in nature and art, and decorate our dwellings with representations of the outer world, and make permanent with the pencil the dreamy imaginations which float in the ever-active mind.

Drawing should become an essential element in our popular education, for while it conduces to our pleasure and amusement, practical advantages naturally flow from it; and although in an elementary treatise like this it is impossible to enter into the minute details necessary for high proficiency in the art, yet it is believed the attentive student will find here an incentive for further study, and that, by following the concise but systematic directions here given, he will, although a beginner, be enabled to produce pleasing pictures with a true artistic effect, and lay the foundation for a thorough knowledge of the principles of drawing. Success in any thing is in proportion to the exertion put forth, and the student-

artist who, with fixedness of purpose, and with patience, applies his mind and hand to the work may feel assured of the most gratifying results; and each successive difficulty overcome, and every new idea gained, add knowledge, experience, and encouragement.

A perfect muscular control of the hand is of the first importance in drawing, as accuracy of outline and delicacy of expression can only be obtained by having the fingers in complete subjection to the will, so that the slightest volition will be properly interpreted by the pencil. This requisite facility in the use of the pencil or brush can be acquired only by patient practice, the length of time necessary for its attainment being in some degree dependent upon the natural ability, taste, or "genius" of the learner. Of equal importance, and as absolutely indispensable, is correctness of eye in determining distances and measurements — an attainment which can be carried to a wonderful degree of perfection. *Thorough practice in making straight and curved lines* demands the first attention of the beginner. *Commence with short horizontal lines*, gradually increasing the length, making the line in a distinct, bold, and rapid manner, first from left to right, and then *vice versa*, thus : —  ;

next, straight lines touching each other at different angles, thus :  ; then perpendicular lines, thus :



Too much practice cannot be given to these lines, and the difficulties at first experienced in drawing straight, continuous lines will gradually diminish. When these right-lines, horizontal, perpendicular, and at various angles, can be drawn with accuracy and with freedom of pencil, then practice the following, which is a combination of them all, thus :

nations will suggest them-
inventive mind, and the
astonished in his practice in
variety of forms and almost
tions can be produced from
It may be well to copy some
posed of straight lines ; but
od is to draw from the store-



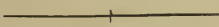
Other combinations will suggest themselves to the learner will be finding what a endless variety of straight lines. figures composed of the best method house of your

own invention, taxing the mind for new combinations, and thus adopting one of the surest means of success. The power to originate, as well as to imitate, is necessary to make the true artist.

Having attained a degree of proficiency in straight lines, the next step is the *curve*, with all its variations. Commence by drawing a horizontal line, connecting the ends by arches of different altitudes, then perpendicular lines, connecting the ends by arches in the same manner.



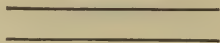
In each of these cases, the straight lines form a basis by which to determine with more accuracy the true sweep of the arch curves; and all irregular forms can best be determined by their relative positions to straight lines. A practiced eye will soon learn to detect right lines in all things, and thus have an unerring standard.

Now draw straight lines, and divide them into equal parts, testing the accuracy of your eye by the compasses,  and practice this until the eye can measure with great accuracy. Then draw arches, (without any base line,) and divide them in the same manner.



Forms of grace and beauty being dependent upon curved lines, great attention and practice should be given to them in the infinite variety in which they occur. Select simple curvilinear forms, and having acquired some proficiency in making them, advance to those of a more difficult character; vases, goblets, shells, and numerous other forms combining curved lines will readily occur to the mind of the artist.

It will now be found a good practice to draw straight and curved lines with their parallels, varying the spaces between the lines until the hand becomes steady and accurate in its motion, and the eye determines the equi-distances, thus :



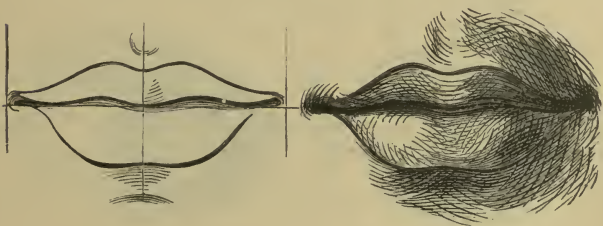
Make the lines with boldness, and a certain degree of rapidity.

Thorough practice in drawing these lines, and in dividing them at equi-distances, gives to the learner the whole alphabet of drawing. Too much attention cannot be given to the combinations of which these various lines are susceptible, and patience and diligence are indispensable requisites to success. All mistakes should be carefully

corrected, not in imagination, but in reality, as thus the hand and eye gain experience. Fruit and flowers are interesting models from which to draw, and these can be followed by more complicated subjects.

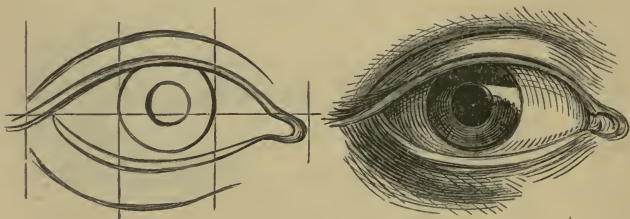
The drawing of the human head, and indeed of the whole human form, being wholly dependent upon curved lines, no more appropriate place will be found in which to give a few elementary directions on this branch of the art of drawing; and it may be remarked, that in all the works of nature no straight lines are to be found; trees, flowers, leaves, fruit, and every motion of air or water, are curvilinear in their character.

It is easier to draw a head in *profile* (side view) than in any other position, as in this way the features can be more



readily preserved, and a little practice in profile drawing (strict attention being given to the originals) will insure a

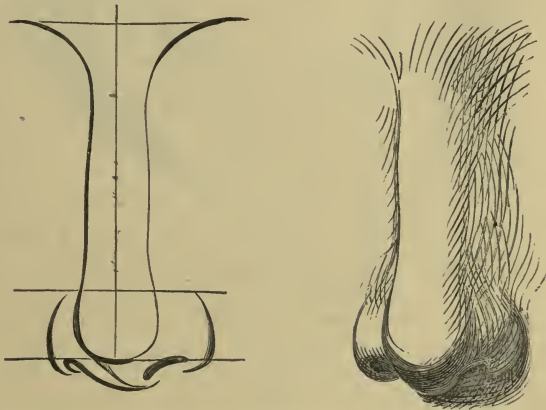
creditable degree of proficiency. In drawing a *front view*, the artist should begin with the mouth; and as a general rule, in the words of an artist-author, "before making any attempt at expression he should become familiar with the actual form of the features, and be capable of delineating them knowingly." The line made by the meeting of the lips is the first thing to be drawn. Draw a straight line, and upon it mark with a dotted or faint line the width of the mouth, center, thickness of lips, etc., giving careful attention to the form; then develop these marks into a correct outline of the form to be imitated, and the remaining steps of filling up will come in easy succession. Repeated experiments should be made until the use of the straight or base line can be dispensed with; and the same principle will apply to the drawing of the eye. Practice



will enable the learner in a short time to preserve the relative proportions as well without as with this line.

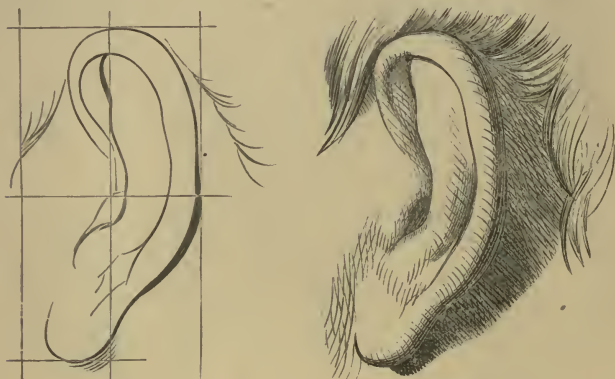
In making the lines which give form or rotundity, commence with the most prominent ones, attending carefully to all the details of light and shade, and not attempting too rapid progress. The principles above given will apply with the same force to other features, and the pupil should practice with patience each and every feature before attempting to combine them. The accompanying diagrams will be of essential service to the pupil.

Having attained some proficiency in these, the pupil can next proceed with the following, practicing patiently and thoroughly.



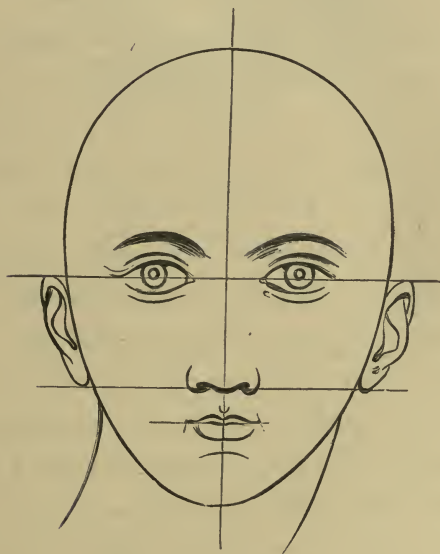
It has been remarked that it is easier to draw a *profile* than a front view; therefore it is recommended to the

pupil to commence a perfect head with a *profile* ; and here nature provides a base line or point of unerring certainty, by which to produce the head. With the head in an erect position, a line connecting the lower points of the nose and ear will be horizontal ; and thus is established a basis to which all the parts of the head must have certain



fixed relations. Erect a perpendicular from one end of a horizontal line, and upon this mark the length of the nose, equal to *one fourth the whole height of the head*. This proportion will, of course, sometimes vary, but it forms a pretty accurate measurement. The *oval*, we mean the *egg-shape oval*, although of little use in profile drawing, in a full front view is of striking use and value.

The student unacquainted with the subject will be astonished to see how nearly the human face partakes of the oval form, and this knowledge, when acted upon, will be of great assistance. A single outline illustration will show better than pages of print the force of our remarks upon the oval form of the human face.



The obtuse or elongated form of the oval must be determined by the individual cases.

As a general observation, it may be said that just in proportion as the head is elevated or depressed from an erect position, the line from ear to nose, before alluded to, will cease to be horizontal, and take a greater or less curvature; still it will continue to be a governing line. Care and judgment in the use of the oval is necessary, as at every inclination of the head to the left or right, the perpendicular or center ceases to be a straight line, and as the curvature increases the line loses its position as a central line for determining the features, while the oval is gradually lost for an outline as the picture approaches a profile. The imaginary central line of the head and face should always receive the careful study and continual attention of the student, as it determines the general character of the head and its separate parts.

Copying plaster casts is an excellent practice, and the learner should improve every opportunity for observation and study; and all attempts at imitation, either from casts, living heads, or paintings, will insure gratifying progress in the art. Proper subjects for copying are within the reach of all those into whose hands this book will fall. As the pupil passes on to advance pages, he will find various directions for the minutiae of draw-

ing, which will be of use in all his attempts to represent the human head.

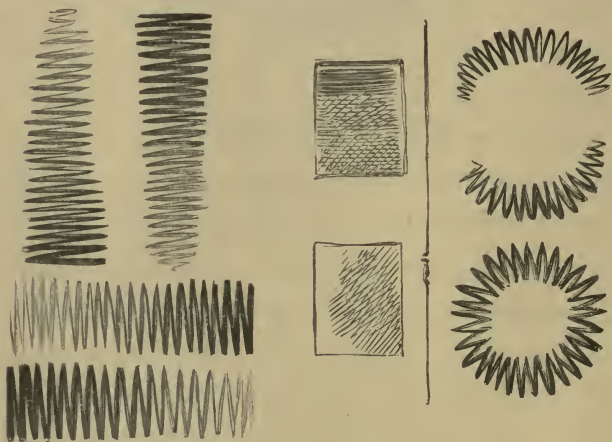


LIGHT AND SHADE.

A proper disposition of light and shade gives to drawing and painting the expression of form, and thus the eye receives nearly the same impression in looking upon the flat canvas or paper as upon the natural objects. So Ruskin remarks, in speaking of color and shading, "Every thing that you can see, in the world around you, presents itself to your eyes only as an arrangement of patches of different colors variously shaded; . . . and the first thing to be learned is, how to produce extents of smooth color, without texture." To acquire proficiency in effecting a true light and

shade, the pupil or learner must possess an accurate or a cultivated eye to aid him in giving true representations of the objects to be painted or drawn.

The variety of form and direction in nature can only be imitated by a corresponding variety in the lines and touches used in their delineation, expressing as nearly as possible the exact form and character of the original. For instance, an even, smooth surface requires an even-



ness and regularity in the lines, approaching as nearly as possible to an unbroken surface; and if it is desired to imitate a broken or uneven surface, recourse must be had to broken, curved, or uneven lines, such as

will best represent the object. It will readily be perceived by the learner that the lines (if the shading partakes of the linear character) must vary according to the subject.

The representation of a *round object* is managed by a careful disposition of the light upon the convex part, and the shade attending it. It is this difference in the shading which gives objects drawn on a plain surface their proper relief, and expresses space and distance. Indian ink, or sepia, is useful for this purpose. Prepare two, three, or more shades of either in small cups, lay on the shades with camel's hair or sable brushes, putting on the lighter shades first, and work gradually darker until the required depth of color is secured. It is better to have the shades too light than too dark, as it is very easy to strengthen shades, but difficult to lighten them. As a general rule, it must be observed that the different tones are to be so blended together as to form a gradual shade, becoming fainter as it approaches the light.

In the disposal of the shades, the following directions may be studied with benefit:—

1st. All the shades of objects in the same piece

must fall the same way, that is, farthest from the light. For instance, if the light comes from the right side of the piece, the shades must fall toward the left, and *vice versa*.

2d. The part of an object nearest the light must have the faintest shades. This rule is observable in the folds of drapery, where the projecting folds appear light, and the inner folds dark. Titian observed, that "the best rule for the distribution of lights and shadows may be drawn from an observation of a bunch of grapes."

3d. Calm waters have either a faint shade or none at all; but there should always be a line of shade near the banks. Agitated waters should have various shades.

4th. In large-extended views, as landscapes, the distant objects are faintly shaded, and the more distant they are, the fainter the shades.

5th. With reference to the horizon and clouds, the clouds nearest the top of the piece are more strongly shaded than those more remote, the strength of shade decreasing as the clouds descend toward the horizon, where they become faint and indistinct, because at the greatest distance from the point of view.

6th. Some substances have the property of reflecting the light strongly, as satin, silk, and all polished metals. In these there must be very strong light, and consequently a deep shade. All bright lights must be contrasted with strong shades, and fainter lights with weaker shades. The examination of busts and statues is of great assistance in establishing these principles in the mind; and a critical attention to the effect of light and shade in the world around us, in the open air, or when the sunlight pours through the windows or door, or where the rays of the moon light up the evening landscape, and steal in through the opening curtains, indeed, the opportunities for studying the various phenomena of light and shade are ever present with us, and the observing pupil will in this way learn more than by pages of directions.

PERSPECTIVE.

Perspective is the art of drawing on a plain surface the true representation or appearance of any given object, as it would appear upon a pane of glass when held upright between you and the object.

The eye of a person when sketching from nature is presumed to be placed in the center of a circle of 360° , and the expanse of vision, while the eye is stationary, is an angle of 60° ; in other words, the eye embraces a range of 30° on each side of a center. This angle of



60° has no reference to the length of lines on either side, since they are regulated by the assumed width of the picture proposed to be drawn; for instance, if your perspective plane be some distance from you, the objects would be larger; if nearer, the objects would be smaller—both pictures representing the same scene.

If a person standing on the sea shore look far away over the expanse of water, he will observe a boundary line — the water apparently meeting with the sky by a well-defined straight line. This is called the *horizontal line*, and it is exactly opposite the range of the eye; and that particular point of the horizontal line to which the eye of the sketcher is directed is called the *point of sight*. If he ascend to any height on the shore, the line of the horizon must be placed higher in his drawing, because his eye is so much higher; and the axiom laid down in the previous paragraph holds true, that the horizontal line is that line exactly on a level with the eye.

Any person looking on a straight road which continues into the extreme distance, may observe that the edges of the road appear to terminate in a point. Perhaps a better illustration of this may be found on the track of a railroad, in a part where it is perfectly straight. The rails, as they recede into the distance, converge until apparently lost in a point, and at the same time appear to rise up, the extreme point being just level with the eye.

From facts like these Chapman deduces these elementary principles; that, —

“I. The point of sight must be in the center of the perspective picture.

“II. All lines parallel to an imaginary line drawn from the eye of the observer to the point of sight, must terminate or vanish in that point.

“III. The line of the horizon must necessarily rise or descend with the position of the eye, and consequently with the point of sight.

“IV. The base or ground line of the picture, and all others parallel with it, must be parallel with the line of the horizon.

“V. The diagonal of the square, perspectively represented, directs to a point on the line of the horizon, the distance from which point to the point of sight represents the true distance of the eye of the observer from the picture.”

It is not too much to say that strict attention to these principles will produce the most gratifying results in the progress of the learner. One rule the true artist should always remember, that is, never to carry the point of sight *outside the picture*. The eye *naturally seeks* a point of view in the picture, and the nearer this point is to the center of the picture, the greater is the harmony between nature and art.

All objects appear to diminish in proportion to their remoteness from the eye of the spectator. Hence columns, posts, trees, etc., of equal height, will appear to diminish as they recede from the eye. The lines which govern their diminution in perspective drawing are called *vanishing lines*, and if perpendicular to you, vanish in the point of sight, or that point in the horizon exactly opposite your eye as you stand when sketching; if the lines are below the eye, they tend upward, as the rails on the railroad; but if *above* you, as the ceiling of a long corridor, they would tend downward towards the horizon.

The point of sight may be fixed at pleasure; and although, strictly speaking, the *center* is the correct place, it is generally better to place it a little removed from the center of the picture; for if the subject were a street, or an avenue of trees, the perspective would be very formal, and the scene would thereby be diminished in interest.

Many contend that all objects appear better with one than both eyes; alleging that the sight is rendered more powerful by one eye being shut. Be this as it may, it is certain we see a piece of perspective better with one

eye than we do with both, and it is undeniable that by opening or shutting either eye the position and general appearance of an object are changed. It is this very fact that caused Sir David Brewster to reflect, and that reflection has created a new era in the history of discovery by introducing to the world the stereoscope.



SKETCHING.

Before beginning to sketch out of doors, the first consideration should be to get the best point of view, as a few steps to the right or left sometimes make a great difference, always keeping a good lookout for objects that will compose harmoniously and prettily.

As this does not always occur in natural scenes, the sketcher is allowed certain liberties; thus he may add or take away: he may add where there seems a deficiency, so that he keeps the general character of the scenery, or he may take away where it appears too crowded. Sometimes artists insist upon having the foreground entirely at their own disposal, provided they keep up the general appearance of the view. In making hasty sketches (as a pencil sketch is subject to great inconvenience when there are two or three distances, and each drawn in with one kind of mark) it is requisite to make a few written references, as the sketcher may forget the distinctions.

A celebrated English landscape painter, in giving advice to his pupils previous to their departure for a sketching tour, was very particular in impressing upon them the necessity of studying "little bits," meaning by this not to take too much in one sketch, as is too often the case with beginners. One of the best qualities of a sketch is not only to refresh the memory of the sketcher, but to be suggestive and intelligible to every one. We will suppose that a spot is selected containing not more than three or four objects. An

artist seldom, if ever, takes any thing in its broadest and most regular form, and never takes a house (for instance) as if he had taken his position directly in front, nor a row of trees or palisades at a right angle to his own position.

For an early lesson in sketching from nature, a house is very good, but must be viewed from a point a little aside from the front, so as to bring in as many angular features as possible. We will suppose a station to be selected. One way of proceeding is — hold up the sketch book in front, closing one eye in order to determine how much of the scene is to be drawn; the farther off the book is held, the less of the subject will be covered; when the extent is arranged, lower the book to a level, and make a few dots on the margin, merely to point out some of the relative positions; find the horizontal line by holding up your pencil horizontal with the eye, and slightly mark it in; then get the point of sight opposite the eye, on the horizontal line; judge well of the relative distances of the most prominent objects, and faintly mark them in on the paper. By arranging these particulars well at first, a great deal of trouble is saved in erasing false marks. Be careful to give every line

its proper position: a line that is upright in nature must be upright in your picture; lines that go direct from you (that is, perpendicular to you as you stand) go toward the point of sight; if they are above the horizontal line, they tend downward toward the point of sight; and if below, they tend upward. In sketching, it is well to have the lines a little broken, yet having the general appearance of straightness. An easy, rapid, and decided manner of sketching, so as to obviate all appearance of stiffness or formality, is a power acquired only by practice.

If the sketcher's productions after a first or second attempt be not all that can be desired, it is a fair proof that the mind is in advance of the hand, and should operate as a stimulus to further exertion. In proceeding with a sketch, the pencil gradually wears away, and gives an increasing thickness of line: this can be used to advantage, as bold lines of the pencil are frequently needed, especially in the foreground. By a little practice, the pupil will discover that by a gentle twist of the pencil, a sharp angle of the worn pencil will come in contact with the paper, and a fine line can be drawn; and by pressing harder on the pencil occasionally, an

increase of depth may be produced, giving the sketch additional spirit.

ON COMPOSITION.

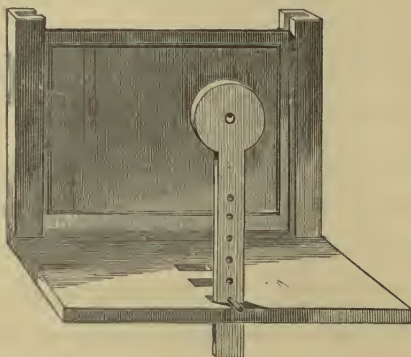
Every production of the artist is reducible to its elementary or skeleton construction of lines and forms; and upon the skillful disposition of these depend the excellence of the composition of the picture. The essential spirit of *composition* in painting, as in many other things, is *variety*. In order to make it agreeable, it is requisite that all the minor parts be so harmonized as to form one well-balanced whole, consisting of a few prominent masses or groupings, which, according to the best written treatises on the principal laws of composition, must be diversified in magnitude and in form. One of these masses should be treated as the principal, and the other as dependent upon it and contributing to it, and at the same time it is necessary they should be distinct in appearance and place. Whatever form may be determined upon, it is necessary to guard against a fixed regularity, so as not to repeat any form or shape; and whatever be the general outline of the masses, they

should not be regular, nor must we fall into error on the other side by having them too broken; but the various parts should bear and preserve a relation to each other, showing a whole so well balanced that one part cannot be taken away without the deficiency being felt.

A TRUE METHOD OF DRAWING IN PERSPECTIVE
WITHOUT A KNOWLEDGE OF THE RULES.

Many persons would like to sketch from nature if they could be free from the trouble of acquiring the principles of perspective drawing. To such, and to others, we present the following description of a method in which little study is required, and yet the proportions and distances of objects will be exactly preserved. Get a large piece of fine, clear glass, fitted in a wooden frame. This frame is to slide between two cheeks or pieces of wood one and a half inches thick, which are raised at the two extremes of a board the breadth of the frame: the cheeks are grooved to receive the frame. In the middle of this board square holes must be made to receive the movable eye-hole piece, so as to be raised or lowered at pleasure. At the top of this is a circular piece of tin, three or four

inches in diameter, with a hole in the center about the size of a pea. The following drawing will give a pretty accurate idea of it, and any cabinet maker can work from it.



Place this instrument before the object you would draw, look through the little hole, and if you see all the proposed objects on the glass, the instrument is rightly fixed; otherwise, fix the sight nearer the glass in one of the other square holes, adapt the eye-piece the height you wish, and fasten it with the pin. The eye-piece being adjusted, keep one eye at the hole, closing the other, and, with a firm and steady hand, trace in on the glass all the objects you see.

You can draw on the glass with pen and ink, then lay a moist sheet of paper on the glass, (the side that has the design,) rub or press the paper gently thereon with the hand, and the whole draught will be impressed or transferred from the glass upon the paper.

Some use a fine brush with oil color, pressing the paper on gently while the oil is wet ; but we leave you to your own discretion, having given you a knowledge of the method. The sketch of a palace is as easily taken as a landscape, and a church as a house or chamber ; all required in any subject being a situation where the whole object intended to be represented may be seen, and to bring the sight to a proper nearness to the glass. These drawings cannot fail to be according to the strict rules of perspective : the eye-hole has the same effect as the point of sight in the other methods.

Another method of using the same apparatus is to divide the glass into squares with threads, thus saving the marking the glass with ink or color ; in this way you have your drawing marked off in the same number of squares as much larger as you wish, and proceed sketching on your paper what you see in the corresponding squares in the natural object.

To enlarge and diminish a Drawing. — Divide the original piece into a certain number of squares by perpendicular and horizontal lines, making as many in the original as in the space intended for the copy; number the corresponding squares alike, (your copy may either be larger or smaller;) then observe what parts of each square the different marks run in the original, and draw similar ones to correspond in your copy. This is the best method for enlarging and diminishing. For oil paintings, pieces of twine or thread might be tacked across at equal intervals, so as not to injure or mark the painting; or for small engravings you can procure a piece of stout card paper; cut a square in it the size of the engraving you wish to copy; divide the sides and ends into half inches; then with a needle and thread pass through the various marks from side to side and from top to bottom, taking care that the thread always comes from the same side of the card, so as to lie close to the engraving when used. Number the threads each way. If you wish to enlarge the copy, it is necessary to determine the proportions one, two, or more inches to the half inch of the thread card.

PENCIL DRAWING. — After having the form of an object drawn, we want it better defined; for instance,



if we wish to shade a ball, we must follow the shape, and let all the shade marks be rounded, marking dark on the side *farthest* from where the light strikes it,

working gradually fainter until the shading is lost in the spot of light; if we wish the same circle to represent a flat surface, make all the shade marks straight and even, so as to represent one shade. In this way, by studying the natural object we are drawing, the pupil will make pleasing progress.



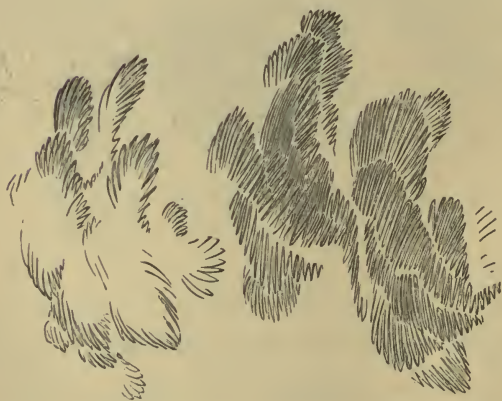
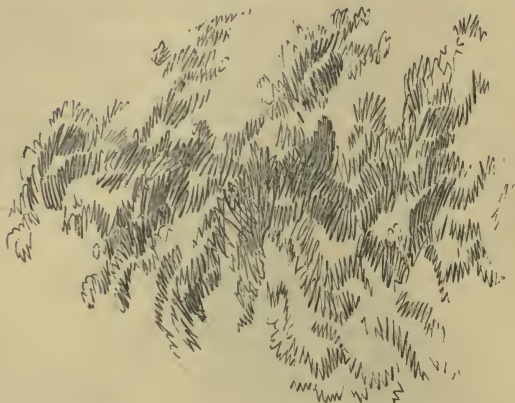
In shading houses, trunks of trees, rocks, etc., observe which way the natural direction of lines should run, so as to best harmonize with the original, and proceed accordingly.



FOLIAGE.

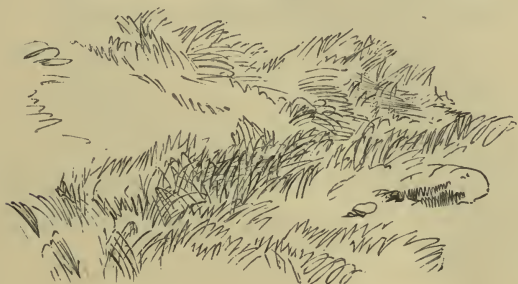
When a tree is in the foreground the leaves are distinctly seen ; we can readily distinguish the form, and the light and shade is in strong contrast ; if we move our

position, and make the same tree appear in the middle distance, we can recognize the same tree, out the light and



shades are not so strong ; if we again remove our position,

and cause the same tree to be in the extreme distance, the atmospheric perspective softens the general tone, and makes it uniform. Linear perspective gives us the cause of the diminution of size, but in addition to that we have



diminution of tone, a fading out as it were, owing in part to the intervention of the atmosphere. In representing this with the lead pencil, the form should be strictly observed, and an even, pale, misty tone obtained. But in

the foreground, the high lights must be strictly kept, and the shades deepened with an even gradation. We would recommend a careful study, not only of all the pencil practice we have here introduced, but of numerous others; these should be practiced well from memory, as, by so doing, ease, freedom, and facility are obtained. Masses of foliage can be represented by any of the zigzag working of the pencil; the outside form of the tree has to be studied, and the marks best adapted to it applied.

When a drawing or painting is finished, one of the best means of improving is to study it well, and do another from memory. By doing this conscientiously improvement is far more rapid.

For instructions in detail on this subject the reader is referred to the series of Self-Instructive Handbooks on Drawing and Painting, issued by the publishers of this volume.



SINCE the preceding pages were written what are now called "Transferring Patterns" have been introduced. By using these patterns one may be entirely independent of all knowledge of drawing for many kinds of decorative work described and taught in this book. This information is not given to depreciate the study of drawing, on the contrary, we advise very forcibly every one to learn how to draw, but for those who will not, or think they cannot, the "Transferring Patterns" will be the best substitute; and as frequent allusions will be made to them a description will be of interest to the reader. A transferring pattern is literally a paper stencil; the design is drawn in outline on bond or parchment

paper, a very thin, tough material; then with a machine which is made for the purpose, all of the lines in the design are perforated with minute holes so close together that when a powder which is prepared explicitly for this use is rubbed over the pattern the design will be transferred in continuous lines to any material desired.

Directions for using them are as follows: —

DIRECTIONS FOR USING TILTON'S TRANSFERRING DESIGNS.

MATERIALS. — The materials required are Transferring Designs, transferring powder, an implement for using the powder, and a box for the powder, etc. A limited quantity of powder is given with the designs, — more may be obtained from the publishers at twenty-five cents a package. The best thing to rub the powder on with is a roll of soft felt made of a gentleman's old soft felt hat, cut in strips of about one inch and a half in width and rolled tightly. After being rolled and sewed together the ends will be uneven, and it must be burnt down until the surface is perfectly flat and smooth. This can be done by putting it on the top of a hot stove and rubbing it every few minutes on some rough surface. When done it will be about one and a half inches

high, and from one and a half to two inches in diameter. This if properly made will last a lifetime. A more simple way is to use a cotton spool after tying two or three thicknesses of cloth over one end, and over that a piece of soft chamois leather.

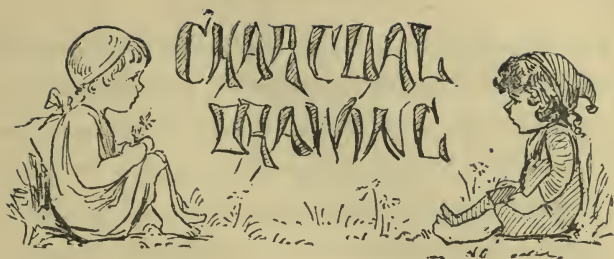
For the powder have a box made, say six by eight inches in size, and about two inches deep, with the inside bottom lined with woollen cloth; partition off a space at one end to keep the powder in bulk, and have the compartment wide enough to admit the felt roll, — a common table plate will answer in place of the box, but the box will be much better, for this reason, — the best transfer can be made by using a very small quantity of powder. Dip the felt roll into the small compartment containing the powder and then rub it over the cloth-lined bottom of the larger compartment; this will distribute the powder evenly over the surface of the felt roll as well as to rub it in, and will regulate the quantity used so as to give as much or little as may be desired.

DIRECTIONS FOR MAKING A TRANSFER.—The transferring should be done on a smooth table. Lay the design on the paper or material to which the transfer is to be made, with the wrong side up. One side of the design will be found perfectly smooth while the other is slightly rough; secure

it in position with some heavy weight—a flat-iron will do placed on the end, corner, or side, so as not to cover the design,—hold the other end or side down with the left hand, and hold it down so closely that no powder can get between it and the material; with the right hand use the powder. The best transfer on paper will be obtained by using very little powder, only so much as will give a distinct outline of the design; dip the felt roll into the powder, then rub it over the cloth-lined bottom of the box, then rub it gently—not too gently—over the face of the design. If the directions given above for holding the design in place have been followed the unsecured side may be raised so as to see when the transfer has been perfectly made before removing it. This operation is so simple and easy that a very few trials will teach any one how to do it.

The design in this state will not be permanent, as the powder will easily rub off, but by tracing over the lines with a fine-pointed lead pencil, or pen and ink, as the case may require, the powder may be dusted off and permanent lines secured.

A list of Transferring Designs will be sent to any address on application to S. W. Tilton & Co., Boston.



FOR CHARCOAL DRAWING you will need the following materials: A drawing-board, paper, charcoal, stumps, chamois leather, some clean rags, and a crayon holder, some dry bread and a pointed rubber. Take your charcoal paper, which comes in almost every shade from white to very dark tints, cut a piece of the required size, and taking your drawing-board (see explanation of a drawing-board in article on water-color painting), pin your crayon paper to it securely with your thumb-tacks, one in each corner. The usual and the most artistic method is to use coarse, rough charcoal paper, either white or of some tint, such as gray, blue, brown, etc., and draw upon it with a delicately sharpened charcoal point, putting in all the lines delicately and firmly, and doing all the shading with the point by making fine lines crossing and recrossing one another (see light and shade in article on drawing), and blending together so as to

give the required tone. These lines should not be rubbed down with the stump, finger, or chamois, as the object of this method is to get a transparent, clear effect, which it would lose if it were rubbed. This method requires more skill in its execution as very little rubbing out can be done, as it smoothes the drawing. It is best to use bread to rub out when it is required. The bread should be rather stale, as new bread will grease the paper. Take a small piece of soft bread about the size of a large bean between your thumb and finger and roll it until it makes a hard, firm little pellet. Shape it into a point at either end. Hold it between your thumb and finger, and use the points to rub with. It is best to keep some pellets for rubbing the drawing in dark places, for the bread soon becomes dirty and would spot a light place. Keep making new ones and only use fresh ones for places where there is a bright light or clear paper, as the least spot will show. It is very effective when colored paper is used to put on the brightest lights in white chalk, using a finely-sharpened piece of chalk, and drawing with it a delicate line or network of lines, over the place where the highest light is, according to its size. Sometimes, for instance if you are drawing a head on gray-blue paper, it is very effective to put a high light behind the head by cross-

ing the paper in that part with a network of white lines. It throws the head out with wonderful effect. Or if you are drawing a landscape with a dark sky with a bright streak near the horizon, put in that brilliant streak with white chalk; or if you have large white floating clouds you may touch them up here and there with chalk. A number of illustrations will suggest themselves to the reader.

Another style of drawing is to proceed as follows: Fasten your paper to the board as before. The paper may either be tinted or white as preferred. Make your drawing with the point and then shade with the point. The shading in this case is to be rubbed in afterwards with the stump, so that it is best to take a soft piece of charcoal and rub it on not in lines always but with the side of the point. The point in this way will soon wear down and become flattened on one side, and will make soft broad lines or streaks. Put on your shading with a light hand, and do not bear down upon your point unless you want it very black. Experience will soon teach you how to regulate this. Then take your stump and proceed to rub the shading in with it. There are different kinds of stumps, those made of chamois leather and those made of paper. The latter are generally thought the best adapted to charcoal drawing. They are used prin-

cipally by the artists in France, and a drawing where they are used is called a Tortillon drawing. Take your stump, holding it as you would a pencil, and proceed to work the charcoal into the paper. Hold your stump so that the side of the point comes in contact with the paper and you will get a broader, smoother effect. When working in a very small place you may work with the point, but it is not a good plan unless you cannot help it. Stumps are of all sizes, and you must select your sizes according to your work. A couple of very small ones, a couple of medium sized ones, and a couple of larger ones do very well for a beginning. These stumps have two ends each, and one should be kept for clean work and the other for dirty work; for instance, one for delicate tones and one for dark tones. However, as these stumps are very cheap it is as well to have a good many of them for they soon wear out. Up to a certain point they improve with use, and a well-used stump gains a softness and pliability that is missing in a new stump, which is often quite unmanageable. To one who knows anything about painting in water-colors it will be a great aid to remember that this stump work is very much like putting on a wash in water-color painting. He may consider the charcoal which he puts on with the point as the color and the work with the

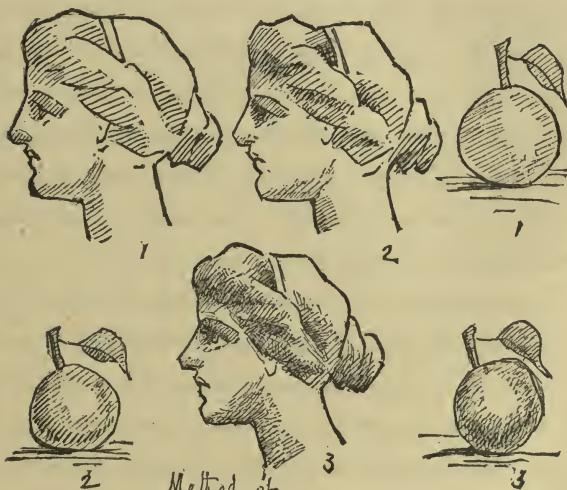
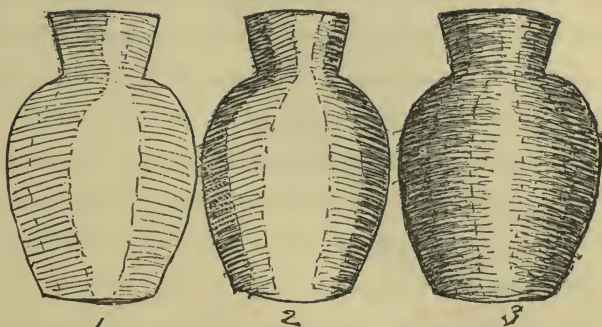
stump as the spreading of that color. As in painting he will have to put on successive layers to make the shade or tone dark enough. The best way to work is to make all the darkest shadows or *tones* first, then the *half-tones*, or next darkest shadows, and so work gradually up into the *lightest tones*, and fade away altogether in the high lights. These tones must be considered very carefully that the *values* may be right, for upon the values depends the great worth of a charcoal drawing.

By the *values* is meant the different tones in their relations to one another; thus: the pupil should carefully weigh in his mind after he puts on his darkest tones the values of the other shades with that tone. How much lighter is the next shade, and how much lighter is the next shade to that, and in reference to some point in the picture, is it lighter or darker than the surrounding shades, and if so, how much lighter or darker? In this way he will preserve the balance of his drawing and it will be correct. In copying of course this will all be done for him in his copy, but he will be enabled to copy it more intelligently and to understand and appreciate more fully a good charcoal drawing when he sees it. It is very good practice to take any drawing and go over it carefully, pointing out each different tone and comparing it with the

other tones. Too much cannot be said about this, it is such an inestimable aid. When the pupil is drawing from life he may choose an object or model and proceed to select the different tones in that. This is true of all drawing, but especially so of charcoal drawing, where the tones are so susceptible of delicate gradations. The best method to begin a charcoal drawing is after having drawn the outline to proceed to do what is called *block it in*. That is to determine the outlines of the shadows, and indicating them with a very delicate line proceed to fill them in in what is called a *flat tone*, that is one which is all one color or shade without gradations (see illustration of *blocking-in*). When your blocking-in is done carefully and conscientiously you may then proceed to blend your tones together by working along their connecting edges — then proceed to put in the details in the shadows and all the little modifications of tone.

In working in charcoal when you have experience enough you may use your fingers often to help out the stump, but unless you are skilful you will make your drawing smootchy.

There are different kinds of charcoal, and it is better to get the best quality, as the inferior qualities often have a brownish tinge to them or little gritty places in them and do not work smoothly. When sharpening a piece of charcoal it



Method of
Blocking-in.

is best to hold it in your left hand, letting it lie along the forefinger and cutting it towards you *up the charcoal*, away from the point; cut only little slivers off at a stroke. It requires some experience to sharpen a charcoal point well. When it is sharpened place it in your holder. The chamois skin is to rub larger shadows with instead of the stump. Put it over your finger or fingers and rub your charcoal into the paper.

The pointed rubber should be a stiff white one, long in shape, sharpened at both points. Keep one point clean for delicate work. It is to work in fine places with. The use of the bread has been already explained, The clean rags are to dust or wipe away the little particles which you have rubbed out; or if you wish a very smooth flat tone you may use it over your finger instead of the chamois. Sometimes you can get a very clear, delicate tone this way.

CHARCOAL-DRAWING TO IMITATE LITHOGRAPHY. — Get a pine-wood frame and a sheet of crayon-paper. Ascertain the size of the lithograph that you intend to copy; have the frame near the size; cut the crayon-paper to match, and commence to sketch it in the following manner: Put some strong flour-paste, such as bookbinders use, over the frame. Damp your crayon-paper with clean

water, and paste your paper upon the frame: when dry it will be ready to work upon. Proceed in the following way: draw in your subject with charcoal; use the stump to blend, repeating the shades until you get what you want. As finer touches are required for foliage and branches, houses and figures, these have to be done with the fine point of your black chalk. A few lights can be added to advantage with the white chalk. When all this is completed to your satisfaction, preserve the drawing by coating over the back of it with "preserving-varnish." When dry, cut out your drawing, and mount it upon a sheet of stiff white board.

When you have worked in all you can, use a liquid fixatif: this can be obtained from the publishers of this book, with full directions how to use it. After the fixatif has been applied, it secures your drawing; and, if desirable, you can retouch with charcoal and chalk to good purpose. Always use the fixatif after retouching. This can be repeated indefinitely.

The same process, from beginning to end, can be as readily drawn on canvas, the fixatif applied, and, when you have obtained all the effect you wish, you can commence oil-painting right over it.



AFTER one has learned to draw with a pencil he can very readily adapt that knowledge to any style of drawing, whether it be pen and ink, a brush, charcoal, crayon, pastel, or, in fact, anything which is in any way used for drawing. A very hard lead pencil requires different man-

agement from one very soft; a brush requires still different treatment, but a very little practice will teach one how to use the brush or the crayon as skilfully as the pencil.

BLACK CRAYON. — Crayon drawing is very much like charcoal drawing, and the pupil will find it much easier to understand if he reads the article referring to charcoal drawing. Crayon is used exactly as charcoal is. The material is almost the same, excepting that crayons are harder than charcoal points. The paper is almost the same, excepting that the crayon paper is a little heavier, and not quite so rough. The crayon points vary in quality and are of different grades of blackness, as in charcoal. They are sharpened the same way, and are also used in a holder. You use bread and rubber, as in charcoal drawing. The only point in which they differ is that you use chamois leather stumps, as a general thing, in preference to paper ones. The reader, therefore, is referred to the article on charcoal drawing, and will find it will apply equally well to crayon drawing if he merely substitutes the word "crayon" for charcoal. He will find that a crayon drawing can be brought to a higher point of perfection in the way of finish, as crayon does not rub off so easily, and can be worked upon longer and more in detail.

COLORED CRAYON. — Colored crayons or pastiles are put up in boxes of assorted tints for portraits or landscapes, and by the blending of these every kind of shade and color can be obtained, as in oil painting. Get dry colors, grind them very fine in water, add any of the following gums, dissolved in water: gum arabic, gum tragacanth, honey water, sugar candy water; a portion of this is added merely to bind the color: some colors require a little more than others. If too much gum is put in, they will be hard, and not rub off so readily. Gradations of tint are made by adding chalk or plaster to the color; for instance, we will select carmine; add two parts of chalk to one of carmine, and call that one tint; add three parts chalk to one of carmine — call that another; add five parts chalk to one of carmine — call that another; and so with all the colors, in any number of tints to suit yourself. In order to form the color into crayons, press it and roll it out the size you wish; place it upon absorbent paper, — white blotting paper is the best, — and let them dry gradually.

CRAYON PAPERS. — Almost any kind of paper may be used by being previously rubbed with cuttle fish, (if

it have a very smooth surface;) but there are papers manufactured especially for crayon painting and these have the advantage of greatly assisting and facilitating the progress by readily receiving the crayon.

A good paper for portraiture is pumice paper. The paper is prepared with a coat of starch, or isinglass, put over the surface while warm, after which it is dashed all over equally with fine pumice sand. Panels of wood, mill-boards, and canvas can be prepared in the same way. The pupil is recommended to study the designs in pencil drawing; many of the principles there illustrated are of equal use in this.

DIRECTIONS FOR MONOCHROMATIC DRAWING.—Take pasteboard or drawing paper of good quality, size with isinglass, or paint with pure white lead. When this has been thoroughly dried, smooth it well with sandpaper, and paint again perfectly smooth; while this coat is yet hardly dry, sift upon it pulverized white marble, through fine muslin. Marble can be easily pulverized after burning it. When dry, shake off the loose particles. (The process is rather tedious, and requires care, especially in the marbling. The paper all prepared can be had of the publishers of this book, or at any artist-supply store.)

If you wish a tinted surface, add color to the white paint.

You will need for this painting a knife or eraser, crayons, fine sponge, pencils, cork, rubber, piece of kid, and crayon holders. Fold several pieces of kid and soft leather, and use in shading the sharp folded corners; also double some pieces over the ends of pointed and rounded sticks; the learner will find use for several kinds. Always commence painting with the dark shades, and blend gradually into the light. For very dark shades, rub the crayon directly upon the surface with a light hand, and blend off carefully.

Paint the sky first as in water colors. It is well to shade distant mountains *very light* at first, and be sure to have the edges soft and faint.

For water, scrape some black crayon into a powder, and lay it on your board with the kid, working it horizontally, and making the lights and shades stronger as it comes nearer. Your sponge may do good in rendering the water transparent. Make sharp lights with the penknife.

Ruins overgrown with moss, and dilapidated buildings, make pretty pictures. We have seen moonlight

views, in this style of painting, more beautiful than any thing else.

Great care must be taken to do the foliage *well*; many a picture, which would have been good otherwise, has been spoiled by a stiff, ugly tree. By a delicate use of the round point of a penknife, beautiful effects can be produced in the crayon shading.

Figures, animals, etc., are put in last, and a person knowing how to shade in pencil will find no difficulty in this.

COLORED CRAYON. — The monochromatic board is very good for this kind of painting.

Sometimes we make a strong frame of the size of the picture which we intend to paint, and upon this we stretch three thicknesses of paper; then size or paint it, and sift marble dust equally over every part while wet. When dry, the superfluous particles are blown or dusted off.

If you use the monochromatic board, it will be well for you to transfer your picture, as in papier mache painting. If you stretch your paper on a frame, draw the picture on the paper, and shade it nicely with Indian ink (water color) before sizing or painting it.

For a group of fruit and flowers, first arrange the natural ones and study the effect. For a head, we consider the drapery and groundwork; and here allow us to advise all persons to study penciling before attempting this kind of painting; also, to begin by painting simple and easy things. To those who absolutely wish a colored picture, and have little ability to draw it, we recommend that they stretch a nice engraving landscape or head on the frame, at the outset, and prepare it with the sizing and sand. This gives a good foundation.

The picture being drawn, proceed to fill in the background, not of one uniform tint, but varying in shade and color according to the picture; for example, if the lights in your picture are on the right side, the darkest shade in the groundwork must be placed on the right side, and *vice versa*. See that the background be smooth, the dark shades of rich brown or green, and the light of gray, French blue, etc.; then, —

1st. Paint the dark shades of your picture with black crayon, and rub it in with a soft cork. The cork pencils ready prepared are best for that purpose, or rubbers of soft leather will answer.

2d. Put in the light, clear shades, as they belong, with the soft and medium crayons, using the utmost care in blending with the cork, (or leather,) to avoid a dingy and dirty appearance.

3d. Lay on the browns and other dark colors. Where it is necessary to put brown over black, or to blend it in with it, do not rub the two together; use your finger, as well as the cork.

4th. Finish the picture with the hard crayon, laying on in lines and blending with the cork.

Having a variety of colors for other styles of painting, we leave you to use your judgment in selecting from your boxes. You must have *a box of soft* and *a box of hard crayons*, from which to obtain what you need.

Always try the colors on a bit of waste paper.

Do not expect to have just the right thing by simply laying on the colors *once*; you must work line over line very carefully, and many times. The artist must exercise great care that the picture does not become soiled in the delicate parts.

In addition to the colors you find in your boxes, furnish yourself with black and white crayons of different tones, and a good supply of carmine. We prefer the

lump to the pencil. French blue is much used to produce clear lights.

Colored crayons are well adapted for landscape drawing, and for this a harder crayon than that used for portraiture is preferable. The most useful colors are *white*, (white Italian chalk,) *straw color* and *light yellow*, (pale and middle, deepening to sober full yellows of the yellow and and brown ocher hues.) *Blue*, (bright azure tints of varied strength, pale and dark.) *Gray*, (pale and deep, of blue, neutral, and warm tones.) *Reds*, (vermilion tints, pale and middle, Indian red.) *Blacks*, (Nos. 1, 2, and 3.) The paper must be of some available tint, as its color appears through almost all portions of the work; a low-toned olive tint has been found very available. Having the paper an inch or two larger than the proposed picture, sketch the design *lightly* with the black crayon No. 1, making sky and broad tints with the flat surface of broken pieces of crayon, (1 and 2,) rubbed in with the finger; the breadths of the nearer and remote distances are laid in with pieces of broken crayon blended and worked together. The mountains, trees, rocks, etc., are drawn in with black crayons, and then appropriately tinted and glazed with the colored crayons.

METHOD OF FIXING CRAYON DRAWINGS BY STEAM.

—Crayon drawings are more likely than any other kind to become disfigured and defaced, if handled carelessly. A method of preserving them is highly spoken of by those who practice this branch. Get a tin vessel with a tight-fitting lid, and a pipe projecting from the side of the vessel, five or six inches long, with a small head perforated with numerous holes, similar to a common watering can; into this vessel put two ounces of the strongest alcohol, and two drams of powdered sugar candy. Boil it over a spirit lamp; the steam which issues from the pipe must be directed to the back of your picture, until the paper and colors are perfectly saturated.

TO PRESERVE PENCIL DRAWINGS. — Best alcohol, two ounces; camphor, four grains. When dissolved it is ready for use. If the drawing is on ordinary drawing paper, the solution can be coated on the back of the drawing, and the paper will readily absorb sufficient of the liquid to hold the lead pencil. If the drawing is on Bristol board, it will be necessary to coat it over rapidly on the drawing side; or, what is better, put the solution in a shallow dish, and slip the draw-

ing through ; see that the liquid has been all over it ; then stick a pin through one corner, and let it hang up perpendicularly to dry. Another way is, to use weak skim milk, and immerse your drawing in that, drying it in the same manner as before.





BLACK AND WHITE.—This subject covers everything which is done in black on a white surface, viz.: pen-and-ink drawing—drawing in India ink, with the brush, lead-pencil drawing, crayon and charcoal drawing. This is the true definition of black and white drawing, but it need not necessarily be done upon a white ground, that is, white paper. Very often a softer effect may be obtained by working upon a tinted surface in black, and, if desirable, brightening the effect still more by touching here and there with Chinese white, or with white

crayon, or chalk, where you wish the strongest effects of light. This method may be pursued thus: Make your drawing as described in chapters on black crayon, charcoal, pencil-drawing, etc., and rub on in a solid mass white with the point of your chalk, where there is a large surface of light, or draw sharp lines when you wish brilliant and sharp contrasts. Where you wish transparent effects put on your white with the point in sets of lines crossing one another at acute angles, as in shading with a black point.

BLACK AND WHITE DRAWING ON ERASING PAPER. — This style of drawing, which is very easy of execution, is also very effective, and can be practised not only for the purpose of making most attractive little pictures, but as a means of reproducing, with great quickness and facility, impressions received from landscapes, marine views, skies, etc., under striking conditions of light and shadow. In atmospheric changes, such as mist, snow, and moonlight, effects are very easily produced. The articles required for this drawing are varied according to the style of drawing you find most pleasing to your personal taste, or most adapted to your need. I will de-

scribe the simplest style first. You will require erasing paper, a kind of paper prepared for the purpose,* and without which you cannot make these drawings. It is made in almost every tint, from dark slate color, through the pearly-gray tints, to grayish white; from brownish-drab, through the creamy shades to almost white; or of the greenish-gray shades. Having procured your paper, take a finely-pointed *soft* pencil and make a drawing of whatever you wish upon it. This drawing will merely require to be shaded in the darkest and the next to the darkest portions with ordinary line-shading, the tint of the paper serving as the middle-tint or half-shadow between light and shade. Now take your penknife and scratch away the tinted surface of the paper where you wish to have a high light with its point. You will find that the surface will yield readily to the strokes of your knife, and you will uncover a surface, or by a single stroke a line as delicate as you choose, of pure white. For instance, to take an example — you have, let us say, a drawing of an old church tower in the foreground on gray paper. The tower is shaded darkly in pencil to stand out against the tinted back-ground which answers for the tint of

* It is supplied by the publishers of this book.

the sky. You have a few lightly-sketched roofs nestling at the base of the tower, shaded more lightly than the tower, in pencil. Now take your knife and scratch a round white spot for the moon, partly hidden behind the church tower. Sketch in a few clouds with your pencil, slightly shaded, and again taking your knife scratch the edges of your clouds nearest the moon with a few delicate white lines, that they may look as if touched by its light. Still another style is to proceed as above except that instead of line-shading you may (still using a pencil as before) rub your shading in with a stump or the end of your finger, if you are sufficiently skilful. This produces a very soft, delicate effect, and has the merit of being a quicker way of working. Then proceed as before to scratch out your high lights. Still another method is to make your drawing in India ink, and then scratch out the white. Charcoal and crayon do not work so well upon this paper and are not recommended, but if the reader cares to experiment for himself he may be partially successful with them. This is called black and white drawing, but if one chooses, one may obtain very pretty effects by using water-colors, or colored crayon on this paper. Sometimes white

flowers are very effective done in this way with their green leaves and stems painted, or a group of green fir trees, with the snow upon them. It recommends itself for this style of painting, as it is so much easier to scratch out the white than to put it on with white paint, which is always an arduous and tiresome process, as it is difficult to obtain a strong and a perfect white without repeated coats of paint.

According to the *manner in which you scratch off the tinted surface* your effect will be produced. There are different modes of scratching; thus, to produce a solid white mass, such as the moon, a smooth bright portion of sky, etc., in fact any luminous body, you must entirely remove your gray tint in such a way as to leave the white underneath entirely bare, but be careful not to dig into that white or rough it up. In drawing a white mass, such as snow, at the lightest portions the gray should be entirely uncovered,—but between them and the shadows the white should be broken up by bits of the gray, that is, the white should not be entirely laid bare, but should possibly be scratched in lines, leaving the gray between them, or in sets of lines crossing each other at acute angles; in fact, just

as you would draw if you were shading in black with a pencil, only the *paper* is dark and the lines white. By working in this way the white and the dark tones will be blended. In some cases, however, where you wish a striking effect, such as in moonlight, the white may be brought close to the blackest shadows with great effect; as, for instance, a bright gleam of light below a black cloud, — a snow-covered roof overhanging the black shadow below the eaves, etc. In flowers great delicacy may be given by blending the high lights (scratched portions) with the half tones, (the tint), or shadows. This is also true of figures. It is needless to suggest the endless subjects that are fitted for treatment in this style of drawing — the careful study at home, or the hasty effect caught out of doors. The paper, which comes in large sheets, may be cut the size of your sketch-book and laid in between the leaves, here and there, to be ready when wanted. While drawing lay another piece of paper under the hand, as the paper will show spots wherever you press upon it with the hands or fingers.

The publishers of this book are now preparing studies in this style of drawing to aid those who wish to

practise it. Copies upon the required paper, drawn, shaded, and ready prepared to scratch, can be procured; also, packages of six different sketches are furnished, one with the white (high lights) as a sample, and the others ready for scratching. Mounted panels, with gilt edge ready drawn for scratching, of a great variety of tints and sizes, or plain panels with no drawings on them, of the required paper, of many sizes and tints.

Send to the publishers of this book for the latest information in reference to Black and White Drawing, Lists of Prepared Panels, Black and White Design Cards, etc.





A GREAT many useful and ornamental things may be made by applying the art of drawing to other materials than paper. As the reader will easily see, the same rules that are applicable to pencil drawing serve as a guide in drawing with other implements than the pencil, viz.: In drawing on wood let him remember the hints already given him on drawing, and, laying down his pencil for the pen, he will proceed as follows:—

DRAWING ON WOOD.—The woods generally chosen are white holly, pine, cedar, and cherry. The last two woods must be prepared very carefully, that is, so as to have a very smooth, close surface. Any cabinet-maker will make such

simple articles as boxes, etc., and at artists' stores some of the more elaborate articles are kept. To draw on wood the crow-quill pen should be used. They vary as the ordinary writing pens do. A fine but flexible one should be chosen. The ink used is liquid India ink. This ink, which is perfectly black, becomes thick very often, and can be diluted with a drop or two of water.

A rag is necessary to wipe the pen on, as it often becomes clogged by the quick evaporation of the moisture in the ink. Almost any style of picture may be drawn in this way; line engravings may be copied, a woodcut from a book, a little original sketch may be made, etc. The outlines and as much as is thought necessary should be first drawn in pencil—use a soft pencil and draw very lightly, as rubbing injures the surface of the wood. This drawing should be correct and as detailed as possible before the pen is used, for it is difficult to erase the ink; it can only be done by scraping it off with a penknife. or, in large parts, by rubbing with sandpaper, and neither improves its appearance. One style of drawing on wood has been suggested; that is, the ordinary drawing as on paper. Another, and a very decorative and rich style, is that of drawing the outlines of the figures, putting in little or no shading upon the figures, and

with a brush filling in the background with black paint (lampblack), so that the figures stand out in relief and look as if they were inlaid in ebony. This style may also be used on almost any article. These outline drawings are not always so easy to get, but will be supplied by the publishers in the shape of transferring *designs*, which will enable any one without the knowledge of drawing to transfer in a few moments by a very simple process any of the designs on to the wood. (A description, with full directions how to use transferring designs, will be found on page 51.) It seems almost useless to suggest to the reader the articles that may be decorated in either of these two styles. Wooden covers for portfolios, sleeve-buttons, watch-stands, card-cases, easels, palettes, screens, table-tops, picture-frames, mirror-frames. etc., in almost endless variety. To protect the articles after they are finished they may be polished by a cabinet-maker; or, which is not so good, varnished by the artist with white shellac.

DRAWING ON LINEN.—This is sometimes, but very inappropriately, called “Etching on Linen;” see chapter on Etching. To draw on linen the same materials are needed as to draw on wood, only in drawing on articles that are to be washed a kind of indelible ink is substituted for the



DESIGN FOR A DOILY.

India ink. Simple designs are best suited to drawing on linen, and the perforated designs are also suggested for this work. The pen should not be too full of ink, as it is apt to run on to the linen. The reader will find after a little practice that the pen can only be drawn across the linen in certain directions, as it is liable to catch in it and spatter. It is advisable for him to practise on some little pieces at first, as it requires a certain amount of skill. Fine linen is the best. A great variety of articles may be made in this way; doylies and table-mats, tidies, toilet-covers, pin-cushions, splashers, pillow-shams, sheet-shams (false pieces to cover the sheet turned over at the head of a bed), strips for table or mantel-pieces, tea-cloths, the corners and pockets of aprons, corners of collars and cuffs, etc., etc. We have spoken of drawing on linen, but the same rules apply equally well to drawing on satin, silk,* ribbons, etc., only that more articles can be suggested, such as scent-bags, baby-shoes, bows for the neck, banners, screens, fans, covered boxes, handkerchief-cases, etc. Drawing on leather or kid can also be done by following the hints given — such articles as card-cases, boxes, note-books, portfolios, albums, music-rolls, etc.

* See, for sizing, the chapter on painting on silk, satin, etc



DRAWING ON FUNGI.—The common fungus that is to be found growing upon the sides of trees during the summer is used for this purpose. They generally grow in clusters, and are shaped like wall-brackets, or, more properly, they are formed like a half of a hemisphere. They vary much in color, from yellow to cream-white. Select those you think the best in size or shape for your purpose, and cut or tear them from the tree, being careful in so doing not to handle or press them unnecessarily, as your fingers will mark them. Early in the summer is the best time for them. In order to tell whether they are fit for use you should scratch a few lines with a pin, or some sharp point, on the upturned surface, as they

grow on the tree. If they are fresh and tender, and your pin makes little dark lines with ease upon them, they are fit for use. Collect some, take them home, and before they have a chance to dry take some sharp point, say a pin (a large black-headed one is easiest to manage). See that it is not sharp enough to *cut* into the fungus, only to *scrape* the light-colored surface off, and then proceed to draw, as if you had a pen in your hand, upon the surface that was uppermost while it grew on the tree. If you have not gathered it yourself, or have forgotten which that was — it is simply the smooth, fair side where it has not been torn from the tree, nor is seamed with the layers of its growth. The top of your picture should be the curved side of your fungus, the bottom the straight side, where it was torn from the tree, so that in placing it upon the table it may have a flat base to stand on. Draw, and you will find your pin leaves dark lines, as if it were a pen, almost black on the darker fungi and grading up to browns, like sepia, on the lighter ones. This is sometimes called “Etching on Fungus.” Every variety of drawing may be made thus, from a careful study to a quick sketch made on the spot as a remembrance of the place where the fungus

was gathered, or some other memory of a pleasant ramble. They make pretty ornaments either to set upon a shelf or bracket, or to use as a pen-rack, by placing small brass-headed nails, or small hooks with a straight bend in them, such as come for fastening back curtains, exactly opposite each other around the upper curved edge, to rest the pens on, so that they will lie across the picture. If your fungus is large enough, and the right shape, you may insert a little glass inkstand in it, thus: Set it upon the table; see that it stands firmly; if the curved side, which will then be uppermost, affords enough surface to insert in it a little glass cup anywhere in an upright position it will do. A little glass seed or water-cup, such as is used in bird-cages, will do for your inkstand. If you cannot cut a place to insert it with your knife, a carpenter can make a smooth, round hole or well for you with an auger. See that he handles it gently. They also make pretty paper-weights. With a little ingenuity they may be arranged to stand with the curved edge down and the straight edge up. Take two or three little twigs; leave the bark on and trim off some of the little branches on them, leaving enough to make them look rustic and natural.

Set the fungus up on its round edge and measure the length the twigs must be to support it from behind in that position, and see where it is best to insert them to support it. Make little holes in the fungus, sharpen the ends of the twigs, and press them in securely. It should now be quite firm. The inside may be scooped out with a knife and then smoothed with coarse sandpaper. A wreath, or some such design, may be drawn around the hole. In this form it may be used to stand on a dressing-table for jewelry, etc., or on the table for an ash-tray. If it is varnished inside the scooped hole thickly, so as to hold water, a few ferns might be planted in it, with a little earth and some moss, which would certainly be very pretty. The drawing should be done while the fungus is moist and tender, but it should be allowed to dry and harden before you attempt any cutting, for then it will not be apt to be damaged by handling; but you will have to be careful not to scratch it. The fungus will cut when dry like tough wood. It should not be allowed to become very hard, however, for then it will be like hard leather, impossible to cut.



ETCHING OR ENGRAVING BY NITRIC ACID.—Engraving with aquafortis (nitric acid) is the method of fixing a design upon metal by means of the eating into the metal of an acid. It consists in drawing with a sharp point upon a sheet of metal, usually copper, polished smoothly, and covered with a layer of varnish blackened with smoke. When the drawing is finished it is exposed to

a bath of nitric acid. The acid, which will not touch the parts covered with the varnish, will eat or corrode the lines or portions laid bare by the sharp point with which the drawing is made. The varnish is then washed off with spirits of turpentine, and the drawing is found to be engraved upon the copper plate. The perfectness of the engraving or etching can only be tested by the impression or proof taken from it, although an experienced eye can judge a good deal from the plate. The materials needed are these: —

Copper Plates.—Hard plates are the best, being less porous, as the acid bites in more quickly and deeper. Hammered copper, when it can be procured, is best.

A Hand-Vice.

Ordinary Etching-Ground and *Transparent Ground* in balls.

Liquid Stopping-out Varnish.

Some Camel's Hair Brushes, of various sizes.

Two Dabbers, one for the common varnish, one for the white or transparent varnish. (The dabbers are made by laying a small ball of cotton wadding on a square of *fine* silk, then drawing the corners of the silk together above the ball and twisting a piece of strong thread about the

ends just above the cotton, making a thing looking like a shuttlecock.)

Some old Candle-ends, or a kerosene lamp, to smoke the plate.

A Point or Needle-Holder, and some *points* or needles.

A Burnisher.

A Dry-point.

A Scraper.

A Fine Whetstone or oil-stone.

A Lens or magnifying-glass,

Some Wax, to make a rim round the plate.

Two Porcelain Dishes or troughs; one for acid, one for water.

Some Old Gloves, or fingers of gloves, to protect you from the acid.

Nitric Acid, of forty degrees.

Tracing-Paper. — Gelatine in sheets, chalk-paper, or paper for transferring the outlines to the surface before drawing.

Emery-Paper.

Blotting-Paper.

A Roller, for revarnishing and its accessories.

Some old rags.

It is a good thing to dilute lampblack in the stopping-

out varnish. It is used principally for retouching when a mistake is made.

The points can be sharpened, when necessary, on the whetstone.

The burnisher must be kept bright or it will scratch the plate. To keep it so it is a good plan to make two grooves, just the width of the burnisher, in a piece of board, and running the length of the board, and in one to put fine emery powder, and in the other, tripoli and oil. Rub it first in the emery and then through the tripoli, and it will keep bright.

The scraper must also be kept with a smooth, sharp edge, or it will scratch the copper. It should be sharpened on a very hard whetstone.

A funnel is necessary to pour the acid back into the bottle with.

To rub up the copper plate there are many ways. One of the best is charcoal rubbed to powder on the whetstone and mixed with oil.

Keep the roller out of the dust after it has been used.

To Prepare the Plate.—Take the copper plate, wash it with turpentine, wipe it with a soft rag, and rub it with whiting (silver polish). Take the hand-vice, fold some pa-

per to put between the points of the vice and the plate to prevent it from being scratched, and hold the plate firmly within the vice by one corner with the left hand. Hold the plate, with the polished face upwards, over a mild heat, say a spirit-lamp. When it is sufficiently hot, place upon the surface a ball or piece of common etching-ground tied up in a piece of silk. The heat will melt it. If the plate is too hot it will bubble in melting. You must then wait, for it will burn. When the plate is at the right temperature pass the ball of etching-ground over the whole surface of the copper without deluging it. Then, with the dabber, pat it all over, hard and quickly in the beginning, then, as it begins to cool, more slowly, so as to equalize and spread the coating of etching-ground. If you see any irregularity in the etching-ground pat it with the dabber until you have an even surface. It should be a thin coating, enough only to resist the action of the acid, and yet not too thick to admit of very fine work with the point upon it, which would be difficult were the ground too thick. Without waiting for the plate to become cold turn it over, and, with the *oil lamp*, or candle-ends, or whatever you have, smoke the grounded surface, taking care not to burn it. This is done by moving the plate about quickly,

and not exposing the same spot to the flame but an instant. In this way an even black should be obtained all over the surface of the plate. Let it cool and the ground will harden, and you may begin your drawing. The black surface will lose its brilliancy when cold. The streaky appearance, if there is any, will do no harm, but any roughness or appearance of bubbles through the black shows that your ground has been burnt, and you had better wash your plate in spirits of turpentine, and begin all over again. The ground or varnish is thus blackened that you may *see* the marks you are making clearly. When you draw your drawing will be reversed, that is, it will show *white marks* on a *black ground*, but that you will soon accustom yourself to.

You are now ready to begin your drawing. If you are near a window you must pull down the shade, for the direct light of a window will make the lines of your drawing shine, which will confuse you; but out-of-doors this will not trouble you, as the light comes equally from all points, and in so doing does not make the copper shine.

You may now draw with one point or many, as you like, but on the plate you will obtain but one set of

lines, without planes or relief. It is *by the biting in of the acid that the drawing will be modulated and colored*. The point should be held as perpendicularly as possible, for the purity of the lines consists in the manner in which the point comes in contact with the copper. You must learn to use the point with great facility and freely. For this reason the point must not be too sharp or it will cut through the varnish and scratch the copper; if too dull it will also stick in the varnish and dig into the copper. Try it on the edge of your plate. This is very important. You should merely feel the copper under your point without cutting it; at the same time, if you do not cut far enough down *through* the varnish the acid cannot touch the copper, and will leave no line there. In the beginning you will try to draw as on paper—to press on your point for dark lines and draw lightly for delicate ones. This is useless, as you will see later. The room in which you work should not be too cold, as the varnish does not cut so well when too brittle. To remedy this, however, you can put a couple of warm bricks under your work, renewing them occasionally to keep an even temperature. The impressions taken from your plate will, in all cases, show the design reversed,

that is, just the opposite of what you have drawn. In many drawings, such as landscapes, etc., this may not be a matter of any consequence, but in figures where there is action, and in letters, this is important. You must therefore draw or etch on your plate the reverse of what you wish to produce. How to draw in reverse may be learned in two ways, viz.: make your design just as you wish it to appear, place it before a looking-glass, and draw it on your plate as you see it in the glass; or you can make a tracing of the design on thin tracing-paper, and draw on your plate as you see it on the wrong or reverse side of the paper. A little practice will teach one how to draw in reverse without the aid of glass or tracing-paper. To protect your plate while drawing, lay tissue-paper under your hand. If you make a mistake in a line, take some of the varnish mixed with lampblack (retouching varnish) upon a little brush, and stop up that line by painting it over, and cut a new line. Draw a line or border round your sketch; it is necessary for the printer, if you send them to be printed.

The shining of the copper through the lines that have been cut often deceives, and causes you to believe that you have done more drawing in certain places than you

have. Take a piece of tracing-paper and lay it on the plate, and you will see the lines as they really are. Also use the lens, which will help you more than anything, and which you will need to enable you to do fine work.

Put on your glove fingers when you use the acid or it will make bad work with your hands.

You are now ready to expose the plates to the acid. There are two methods of doing this. One is to take a deep dish or bowl large enough to admit of the plate lying horizontally upon or near the bottom. The dish or bowl must be of porcelain, glass, glazed earthenware, or something that will resist the action of the acid. Take your plate and cover the margin around the drawing and the back with a thick coating of stopping-out varnish. When the varnish is dry lay the plate in the dish, face upwards, and pour over it enough acid to cover it to the depth of not quite an inch; with this depth you can watch the biting-in process on your plate.

The acid bought at forty degrees should be mixed with an equal quantity of water, which will reduce it to twenty degrees. This is the strength generally used for ordinary work. When fresh it is clear and slightly yellow; when it begins to be charged with the copper,

it turns blue, then green. It is too crude when quite fresh, and it is best to put a copper cent in it, or a larger piece of copper, the day before using, according to the volume of the bath. When you have old acid which has been used before add a little of that instead. This is the best way to "bite-in" a plate. When the plate is too large, however, to make this convenient, take some sheet wax, cut it into strips two inches or an inch and a half wide, warm it, and build with it a little perpendicular wall all around your plate by attaching one edge firmly to your plate. Make on one corner a little nose, like the lip of a pitcher, to pour off the acid with when the plate is done. To prevent its leaking where the wax wall joins the plate, heat a key and run it round on the seam. When cool it will be acid-proof. By doing this you make your plate into a square dish, and have only to pour acid into it to the depth of an inch or less and your wall will hold it. Now you have to watch your plate carefully. Let us take an example, that you may understand it more thoroughly.

You are supposed to have drawn a landscape. In the foreground are some rocks, a stone bridge, etc. In the middle distance is a group of trees. In the distance are

mountains A sky with a few delicate clouds fills in the top of the picture. You have drawn this with one point and the lines look very much alike. How are you to make the distance faint, the middle distance strong, and the foreground strongest of all? It is done thus, and to this you must pay attention if you wish to acquire skill in etching:—

You wish to produce delicate lines in your sky and mountains. Put your plate into the acid; leave it in only long enough for the acid to begin eating into the lines, then withdraw it. How long this first biting into the copper will take depends on various things. It will be accomplished quicker in a warm temperature, and of course it will also depend on the strength of your acid, which becomes enfeebled by use; that is, the more heavily it is charged with copper from former contact with plates. Also, it is dependent on the quality of your copper. Understanding these facts, you will be able, with the aid of experience, to tell when the delicate lines of your sky and background are sufficiently bitten-in. Should you see any bubbles appear on the plate while it is in the acid bath, take a small feather and pass it lightly over them, to destroy them, for they

will injure your plate. Now withdraw your plate and wash it thoroughly in clean water until you are certain there is no acid left in the lines. Lay over it some blotting-paper in such a manner as to entirely dry it. Then take a camel's hair brush and cover over all that part of the plate where you wish delicate lines (*viz.*, the sky, distance, etc.) with stopping-out varnish mixed with lampblack. It is necessary to mix black with it that you may afterwards see what parts you have covered, as the varnish being transparent, you could not distinguish it from the uncovered parts when dry. Now we come to the middle distance. Put your plate back into the acid and allow it to remain until the lines are sufficiently bitten-in for that portion of the picture. Take it out and repeat the same process as at first (water, blotting-paper, etc.). This second set of lines will of course be stronger than the first set, because they have been exposed to the acid longer. Repeat this process, and put it in the acid again for the next set of lines (the foreground), and go on in this way as long as you choose, according to the various effects you may wish to produce.

Of course there are other methods, originated by va-

rious artists, for which you may consult such books as those by Hammerton, Lalanne, etc. By studying the etchings of such men, and others, Jacque, Meissonier, Seymore, Haden, Whistler, Daubigny, Meryon, Bracquemond, Jacquemart, etc., you may gain more knowledge than in any other way.

To touch up the plate and add delicate lines and effects after the acid has done its work, you use what is called the "dry point." You make it very sharp, and scratch your lines with it *directly upon the copper*. These lines will be sharp and clear, and you may vary them in strength, as in a drawing, but you cannot get such broad, strong lines in this way as you have already in your strong lines made by the acid. The copper will be thrown up on either side of the line cut by the dry point, like the earth by a ploughshare, and you will have to take your scraper, which is triangular, and placing one of the edges flat upon your lines—something as you would use a hoe—draw it obliquely along the line in the opposite direction from that in which you moved the point when drawing. When the lines cross, scrape each set separately after you draw it, and before you draw the next set running in a different direction, otherwise the

lines would get stopped up with copper. If your lines are too dark in any place take the burnisher, and, moistening that place, rub down the copper with it, which will of course make your lines less deep by taking from the surface of the copper. Hold your burnisher flat, that you may not make too much of a depression in your plate. To rub down a large portion of your plate, — wash your plate, take some fine charcoal dust, mix it with a little water and some oil, and rub the plate down with it. The drawing on the plate is now finished. Take spirits of turpentine and wash all the varnish off your plate, when it will be ready for the next process, which is printing.

You may have your etching printed by those who do such work, or if you wish to save expense and also to experiment a little, you may do it yourself. Warm your plate slightly and rub upon it, by means of a dabber, printing-ink. This ink is pure black, tempered with bistre or Sienna earth, more or less, as may be desired. This ink you spread over the whole plate, then you rub off the surplus ink with a piece of coarse muslin, and then rub it with the palm of your hand. This leaves the ink only in the *lines* of the etching. Be sure and

get the margin quite clean. Then, sometimes, if you wish to produce certain effects, after the drawing is cleaned thus, take a piece of coarse muslin and brush all over it hard. This spreads the ink a little on the plate, and gives a soft look. Those who have a press can perform the next step easily; those who have none, must improvise one. A common clothes-wringer can be used. Take two pieces of Bristol board the size of the sheet of paper upon which your etching is to be printed. Take a common clothes-wringer (the one used by me was an "Improved Novelty"), and turn the screw or button until you have brought the rubber cylinders as close together as possible, allowing just room for your package containing the etching to pass through. You want all the pressure you can get. Fasten the clothes-wringer securely in place or you cannot steady it. They are generally made to go on the side of a washtub, and you will have to place it there, but that is no inconvenience. Lay one piece of Bristol board upon the table before you, lay a piece of flannel of the same size over it. Moisten the sheet of paper upon which the etching is to be printed and lay that face upwards upon the flannel. Take your plate and lay it face downwards upon

the sheet of paper. Over this lay the other piece of Bristol board. Fasten all three securely together by passing strings around the Bristol boards from side to side and from end to end, close together. Now take this package and pass it endwise between the rollers of the wringer. You will now need assistance. Get some one to support carefully with both hands the package as it comes through the rollers. They must take care not to let it pass out from between the rollers; but when you feel sure that that portion wherein the plate is contained has passed through, reverse the crank and pass it back again, this time taking it out from between the rollers. The clearness of your proof will depend somewhat upon your wringer, and one example will show you whether, in future, it is best to pass it through once, twice, or more times.

If any acid should get upon your clothing wash it out with volatile alkali.

Benzine is preferable to turpentine for washing the hands, and to remove ink that turpentine fails to wash off.



WE would advise all who come to this book for instruction in painting, to begin with water-colors, as it can be made the basis for instruction in all other branches, viz.: we can give instructions here which, if faithfully practised, will teach how to paint in water-colors. This we cannot do in oil-painting, but if the pupil will learn how to use water-colors, we can show him how to adapt his knowledge to oil-colors. This style of painting may also be learned by those who do not draw, as well as by those who do, the only difference being that those who

cannot draw must depend upon others for their drawings or outlines. Further on we will explain how outline design may be procured already drawn, in almost endless variety. The materials used, and which it will be desirable to obtain, are as follows:—

FIRST, PAPER. — It is desirable to have the best kind of paper. Such papers are expensive; but they are undoubtedly the ones on which the best results can be obtained. They are made for the purpose, and therefore best adapted to serve the ends for which they are manufactured.

They vary from fine, close paper, or that showing scarcely any roughnesses or holes on its surface, to a very rough paper, almost like the rind of an orange. These various papers are suited for various kinds of work. The fine is best for decorative painting or flowers; the medium papers for figures, interiors of rooms, etc.; and the coarser kinds for out-of-door sketching of all kinds, and landscapes. The pupil should, as much as it is possible, determine what he wishes to paint before selecting his paper. For general use the medium papers are the best, as these unite some of the advantages of both the others, and can be very well used in any of the above-named instances. The best results, with the least trouble, can be

had on these papers; but the pupil should accustom himself to work on any kind of paper which may come handy, and not narrow his ideas to the use of one paper or material, as water-color painting can be done not only on paper, but on almost every material from wood to satin. •

The paper may be bought in sheets or in blocks, like the drawing-paper. Before beginning his work, the pupil should find the right side of the paper. If the paper be in large sheets, a very simple way is to hold it up to the light, and he will see the maker's name in transparent letters in the paper. The right side is the one from which he can read the name rightly. If it is a small piece, the pupil should look carefully at the surface, and he will see a certain finish about it also.

PREPARING PAPER. — The following rule for stretching paper should be familiar to every pupil, although he may not be called upon to practise it just at present:—

The paper, if in the sheet form, should be taken,—a piece cut, allowing about an inch at each margin larger than the size for the picture. Wet the paper thoroughly on the *wrong side* with a clean, soft sponge or water-brush. Soak the paper thoroughly, but do not press the sponge upon it, and be careful not in any way to *rub* the surface of

the paper. With a dry cloth wipe around the margin of the paper, still on the *wrong* side, to the width of an inch, and on half of this width spread *thick* mucilage or moderately thin flour-paste. Turn the paper, and place it on the drawing-board right side up, being careful not to touch the paper in the middle more than is necessary, the tips of the fingers absorbing the moisture. It should be held by the edges. Moisten the right side very lightly and carefully with the sponge; then wipe around the edges with a dry cloth, pressing it down hard to make it stick. Leave it in a horizontal position, in a warm room, to dry. Do not put it near the fire. When dry, it will be smooth, and will have shrunk so that it will be stretched tight and firm from the glued edges. The pupil should then with a soft pencil (F, No. 3) draw the outline of the picture he intends to paint lightly and correctly on the paper, taking care to make no more marks than are necessary, as rubbing out does not improve the paper. What rubbing is done should be done with soft rubber. The lines must be drawn correctly before applying the color, as the first covering, however light, over them, will prevent their being rubbed out. When the picture is finished, cut with a sharp knife just inside the glued margin, and remove the

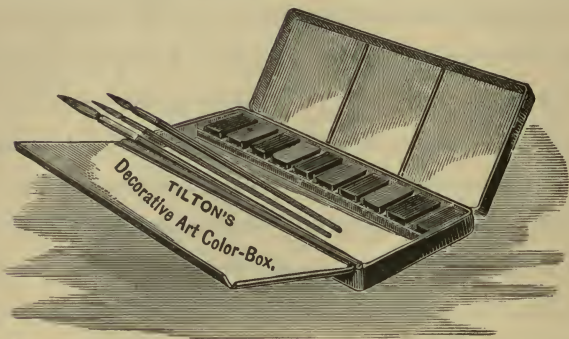
picture Peel or scrape off roughly what is left on the board.

BRUSHES — Brushes are made of sable and camel's hair. The lower grades are made of camel's hair in quills, without handles, and cost from five to fifteen cents each. The higher grades are of black and red sable, in metal, with handles; these cost from one dollar to ten or twelve dollars each. There are also medium grades. In regard to the size of a brush, many artists use but one or two to do all their work. The larger sizes are the most useful, and, if of correct shapes, may also be used for delicate work.

For children and ordinary work the camel's hair brush will answer very well; but for delicate or thoroughly good work the sable brushes are far better, being so well and carefully made that the largest size can be drawn to a point fine enough to make a hair-line. They last for a very long time. After the brush is selected, the colors are to be thought of. For a beginner, all the colors that are needed will be found in "Tilton's Decorative Art Color-Box," No. 1.

We wish to call particular attention to this Box of Colors. They are not Toy Colors, but are manufactured expressly for us in London, for the use of Art Students and

beginners in Water-Color Painting. The following are samples of a large number of testimonials which we have



received from those who have used our colors, and will convey, perhaps, a more satisfactory idea of their value than any words of ours:—

Messrs. S. W. TILTON & Co. Gentlemen· I take great pleasure in recommending your DECORATIVE ART-COLOR BOX. I have used it in the Newton High School, and find that it answers every requirement. The Colors are clear and brilliant, and work well, while its low price places it within the reach of all. I consider it the best of the kind in the market.

Very respectfully, E. F. BOWLER,
Teacher of Drawing, Newton and Salem Normal School.

Messrs. S. W. TILTON & Co. Dear Sirs: As far as I have used them I like them better than the Art School Color-Box which the pupils have been using. The colors being in pans is an advantage; also the fact that the colors can be obtained separately at a moderate price. I have recommended the DECORATIVE ART COLOR-BOX to be used next year.

Very respectfully yours, JULIA A. STETSON,
Girls' High School, Boston.

Each Box, which is made of Japanned Tin, has the name of S. W. TILTON & Co., Boston, stamped on the lid, and contains three brushes, and ten pans of moist Water-Colors, arranged in the following order: *Indigo, Vermilion, Cobalt, Gamboge, Prussian Blue, Crimson Lake, Vandyke Brown, Yellow Ochre, Sepia, Light Red.* Price, fifty cents. All the colors have their names attached.

Each box contains directions for mixing, so as to make any color called for in painting the Outlines which we publish, but for the convenience of those who may wish for other tints without the trouble of mixing, we can supply the following colors, separately, at SIX CENTS each: —

Black.
Brown Madder.
Brown Pink.
Burnt Sienna.
Burnt Umber.
Carnation.
Chinese White.
Chrome (Deep).
Chrome (Pale).
Cobalt.
Crimson Lake.
Emerald Green.
Flesh.
Gamboge.
Green Bice.
Hooker's Green.
Indian Red.

Indian Yellow.
Indigo.
Light Red.
Naples Yellow.
Neutral Tint.
Olive.
Orange.
Payne's Grey.
Prussian Blue.
Purple Lake.
Raw Sienna.
Raw Umber.
Red Lead.
Roman Ochre.
Royal Blue.
Scarlet Lake.
Sepia.
Ultramarine.

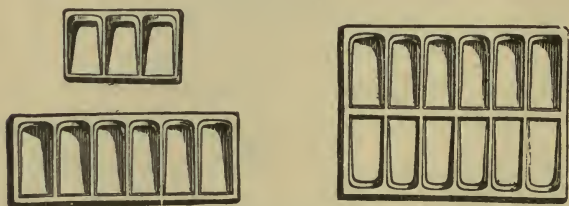
Vandyke Brown.
Venetian Red.
Vermilion.
Yellow Ochre.

—◆—
EXTRA COLORS.

AT TEN CENTS EACH.

Aureolin.
Cadmium.
Carmine.
Bt. Carmine.
Gold.
Lemon Yellow.
Mauve.
Rose Madder.
Silver.

These colors may be found at all of the leading Art Stores; *but if not*, write direct to the publishers of this book, who will send them by mail, post-paid, on receipt of the prices mentioned above; and do not take what are said to be just as good. These have been tested, and we know them to be all we claim for them, and it is important that only good and approved colors be used. The publishers also have other boxes and colors, and will send lists on application.



China Slants.

Two tumblers of water will be needed — one kept clean for wetting the brushes before taking the colors from the cakes; the other to wash the color out of the brushes. The pupil should have plenty of old linen rags to wipe the brushes on. To take the color from the pan, the brush should be dipped deeply into the tumbler until it is thoroughly full of water, then withdrawn, and wiped or drawn

across a piece of linen, to remove all the water that *drips* from it. Then draw it lightly across the cake, taking care not to dig into it, and endeavor to fill the brush as full as possible with color. This color you convey to one of the partitions of a China slant, such as is represented on page 100, into which you have previously deposited two or three drops of clear water. Work the color out of your brush into the water. This may be repeated until you have enough color; then add water till you get a satisfactory shade.

The lid or palette of the color-box or small saucers can be used, but the slants will be found more convenient, besides preserving any colors which may be left.

Some of these partitions should be kept for single colors, the others used for mixing them together.

Where a large wash is to be made, that is, any considerable quantity of color to be prepared for covering a large surface, something which will contain more than the slant will be required.

Mention has been made of a drawing-board; this, or a similar board, will be required to paint on. It can be bought ready-made, or one may very easily be constructed. Sixteen by twenty-two inches is a very good size for gen-

eral use. It should be made of clear, soft pine, about an inch in thickness, and with cleats on the ends, to prevent warping.

When used for painting, the upper side should be raised three or four inches, so that it will slope like a desk towards you; this may be done by placing books under each upper corner.

When the design to be painted is on a single or detached piece of paper, it should be pinned by the four corners to the board, to keep it in place. Drawing-pins come for this purpose; they are quite short, with large, flat heads.

We have described in detail the articles used in painting on paper with water-colors, which, in short, consist of paper, colors, brushes, slant or tinting-saucers, drawing-board, pins, old linen rags, two tumblers of water, blotting-paper. Teachers frequently call upon a pupil to procure as an outfit what will cost from five to fifteen dollars, exclusive of the cost of instruction. This tends to discourage those of limited means, and who do not wish to invest so much money until they are confident of their ability to profit by it. While we are willing to admit that the best results may be obtained from the best materials it is equally true that, while one is learning, a less expen-

sive outfit will answer every purpose. One dollar will buy all that one really needs, to begin with, viz. :—

Tilton's Decorative Art Color-Box No. 1	50 cents.
A block of log-paper	25 cents.
Camel's-hair brush, No. 7	25 cents.

These articles will be sent to any address, on receipt of price, by the publishers of this book; the other articles needed can be improvised. It will not require great ingenuity to provide substitutes for the other things called for.

The first thing to learn is to put on the colors smoothly and evenly, — this is what is called a flat wash, and it is of the greatest importance that it should be practised and learned thoroughly at the outset.

The pupil should not be discouraged if he does not succeed in his first attempts, but continue practising until he does succeed. The time required to learn this cannot be estimated, as some learn it very quickly, while others have to devote more time to it; but it not only *can be learned*, but it *MUST be learned*, before the pupil can hope to succeed with what comes after.

Now, if you have procured the necessary materials, proceed as follows: Draw on the paper which you have

selected an oblong, square-sided figure, say, four by six inches; pin it by the four corners to the drawing-board; next get the drawing-board into position by raising the two upper corners three or four inches from the table, — books placed under it will answer; this will cause the board to slope toward you like a desk; now prepare the wash. The color is not to be used directly from the cake or pan. Remove, as previously directed, a small quantity to the slant, or whatever you propose to mix the color in, add water until you obtain a satisfactory shade. Sepia is the best color to begin with; be sure and mix enough of the color to do the work you have laid out. Now you are ready to begin. First go over the figure which you have drawn with your brush (No. 7) filled with pure water; be careful to go close up to the lines, but not over them. Log paper will not require as much water as Whatman, as the latter will absorb more. Allow it to remain one or two minutes, then apply linen or a blotter, to take up what water remains on the surface. Now, with the brush well filled with the color or wash, begin in the upper left-hand corner; sweep with the side, not the point of the brush, to the right, pressing the brush slightly as you proceed, so as to force out the color; the board being sloped, the

color will naturally flow downwards, leaving a little pool of color in front of the brush and along the lower edge of the space you have just covered; now, with the point of your brush, fill in the right upper corner; go close to the lines, but be careful and not go over them; then draw your brush down, close up to the line, far enough so that when you sweep back to the left, the upper edge of the space you are covering will just connect with the pool left the first time, leading it along downwards; the paper having been wet, the color will readily flow over it, so that you only have to direct it, as it were, and in this way proceed back and forth until you reach the bottom of the square, when you will have this pool of color which you have been leading along down to remove. To do this, wipe your brush nearly dry, then, by applying it to the color, it will absorb all that is not required; if there is any considerable quantity to remove, the brush may have to be wiped and applied several times.

In a book of this description it will be impossible to enter so fully into the details of all of the different branches of instruction as we have done in the flat wash. A thorough knowledge of that subject will be of great benefit to the art student in all future study in painting in colors.

After one has learned the principle and method of applying colors in one style of painting he will the more easily acquire it in any or all others. We have selected Water-Color painting to begin with because we think it will be the best foundation to build upon. It will also be less difficult to understand the directions for and the least expensive to experiment in. It is not difficult to learn how to wash colors on smoothly and evenly, but it will require practice. We do not mean a few hours or days, but *weeks and months*. Begin with a light shade of color, which will be the easiest to put on smoothly. After a little practice begin to deepen the color, continuing until you can lay on an even tint of color, from the lightest to the deepest shade. The deeper the color, the more difficult it will be to lay it on smoothly. The instructions which we have given on this subject have been condensed from "Introductory Lessons in Drawing and Painting in Water-Colors, by Marion Kemble" (Self-Instructive),* to which the reader is referred for more extended information on the same subject.

After the pupil has learned thoroughly the principle of

* This little book will be mailed to any address on receipt of price, fifty cents, by S. W. Tilton & Co., Publishers, Boston.

the flat wash and the graded wash, which is taught in the book which we have referred to, he will have learned all of the mechanical part of Water-Color painting. As we have before stated, this will require diligent and intelligent practice. Our advice will be to practice precisely as above directed until you feel tolerably well acquainted with the use of the brush and colors, when you may procure some of the outlines prepared by the publishers of this volume expressly for water-color practice. They may be had in books, on cards, and on thick, heavy panels. The books are the simplest and least expensive. Each contains eighteen outline pictures, with special directions for painting; that is, what colors to use, and how to mix them so as to produce any tint required. The cost is fifty cents per book, making the outlines cost less than three cents each. These designs being larger than the pages of this book, we are unable to give specimen illustrations. The idea of making them in this form is to afford inexpensive practice for beginners in water-color painting. The designs are so drawn as to enable those who paint them to color them in flat washes, or, when more advanced, to work them up into something more elaborate. After the pupil has practised upon these books for a while



A Christmas Tale

GIRL AND BOY READING. (From Series XIX., Tilton's Outline Designs on Cards.) This series consists of six figure-designs, which may be had on bevelled gilt-edge cards. Price, Fifty Cents for the series of six cards, including directions for painting. The directions for painting this picture may be found on page 115.

he will be able to paint the more elaborate designs which may be had on the Design Cards. Here the designs are drawn on thick cards, with gilt bevelled edges. Each series or set consists of six cards, with directions for painting. They may be used for Christmas and New Year's Cards; also for Valentines, Easter Cards, Birthday Cards, etc., etc. They may also be made into sachets or scent-bags, which may be made as follows: Enclose the scent in a flat, square bag of colored silk the size of the cards, then lay a card, face outward, on each side of the bag, first dabbing a little mucilage on the centre of the bag to hold the cards in place. Tie the four corners of the two cards together with bows of ribbon to match the silk bag. These, when colored, have become quite popular. They may also be made into many other decorative forms. We have been able to select a few of the designs on cards small enough to show in these pages as specimens of the style. We also give the directions for painting them, which will show the reader how simple and interesting this method of teaching water-color painting is.

After the Design Cards we suggest the Panels. These, of course, are much handsomer. The designs are very beautiful flowers, figures, etc. The panels vary in size



PANEL. GIRL DANCING. (From Series XVII., Tilton's Outline Designs on Cards.) This series consists of six figure-designs, which may be had on bevelled gilt-edge cards. Price, Fifty Cents for the series of six Cards, including directions for painting. The directions for painting this picture will be found on page 115.

from 4 by 6 inches to $7\frac{1}{2}$ by 15. They are made of Whatman paper, which is made for water-color painting, mounted on heavy panels, with gilt, bevelled edges, and are suitable for presents. Each panel is enclosed in an envelope, with full directions how to color it. As we are constantly making new designs, the reader is advised to send to the publishers* for their latest list.

In presenting these specimen designs to our readers, we wish to say that for one to select a half-dozen subjects from a collection of several hundred which should fairly represent the whole number, would be a difficult task under the most favorable conditions. Here, the size of our page is so small that we have been unable to include the best subjects. Then, too, the reader must remember that these designs when furnished on thick, heavy, gilt-edge cards, and printed in soft pencil lines, have an entirely different appearance than they do as here shown; really, they will convey a better idea of the series of Outlines in Books, as one will only have to imagine larger designs and broader margins, and he will have a tolerably fair idea of the books. With this explanation we will proceed by saying that these outlines consist of Figures, Flowers, and

* S. W. Tilton & Co., Boston, Mass.



PANEL. GIRL AND POPPIES. (From Series XI, Tilton's Outline Designs on Cards.) This series consists of figure-designs, which may be had on bevelled gilt-edge cards. Price, Fifty Cents for the series of six cards, including the directions for painting. The directions for painting this picture will be found on page 117.

Landscapes. The figures are the more simple, and one can, after a little practice in the flat wash, make quite effective little pictures of them. Flowers will require more skill, which will come with longer practice, as there are delicate lights and shadows to be painted in which can only be learned after considerable practice with the brush. Landscapes are still more difficult, and will require not only a thorough knowledge of, and practice in, the flat and graded washes, but the pupil must know something of the colors he is to work with; viz., in a landscape there will be foliage, rocks, plains, foreground, distance, middle distance, water, etc., etc., and there are certain colors which will represent each of these effects better than others. This the pupil must learn. "Artists' Colors and How to Mix them so as to Produce the Best Effects" * teaches all this as far as it can be taught without practice. Besides giving information how, by a judicious selection, a few colors may be so mixed as to produce all of the colors in general use, it has tables for skies for fair and cloudy weather, water, rocks, foregrounds, distance, middle distances, etc., etc.—a very valuable manual for all art students. We hope the reader has given strict attention to our instructions, and fully understands

* Published by S. W. Tilton & Co., Boston



JONQUIL. (From Series IX., Tilton's Outline Designs on Cards.) This series consists of six flower-designs, which may be had on bevelled gilt-edge cards, or on Whatman's prepared water-color paper. Price for either, Fifty Cents for the series of six cards, including directions for painting. The directions for painting this picture will be found on page 117.

that *practice* will be his teacher. As long as he faithfully practices he will continue to improve. Art is a study which, no matter how much time one devotes to it, there will still be something to learn. As we have before stated, all of the outlines issued by the publishers of this book have special directions for painting, and that the reader may see how carefully the lessons have been prepared, we will give directions here for painting the specimen outlines already shown. By simply following directions very effective little pictures will be the result. Of course the success will depend upon the amount of practice previously given. The circular of instructions which accompanies "Tilton's Decorative Art Color-Box" shows how all of the colors called for may be produced from the ten contained in the box.

Girl and Boy Reading (from Series XIX., Tilton's Outline Design Cards). — GIRL: Hair, light yellow; waist, pale olive-green; skirt, left white, pale blue flowers, light olive-green leaves; ribbon in hair, pale blue; book left white, shaded with yellow-grays; edges of leaves and cover, dull light-red; skin, fair; cheeks, lips, and fingers, rosy.

BOY: Cap, dull light yellow; hair, reddish-brown; suit, dull red; vest tan-color, with blue figures on it; shoes, light tan; skin, brownish; cheek, lips, and fingers, rosy. Light, yellow-gray wash behind boy, and up to back of seat; seat, light-reddish, brown shaded; floor, light, bluish-gray wash.

Girl Dancing (from Series XVII., Tilton's Outline Design Cards). — Cap, pale blue; dress left white, shaded with yellow-grays; sash, rose-color; scarf, pale olive-green; hair, reddish-brown; skin, fair; cheeks,



SWEET VIOLET. (From Series V., Tilton's Outline Designs on Cards.) This series consists of six flower-designs, which may be had on bevelled gilt-edge cards, or on Whatman's paper, prepared for water-color painting. Price for either, Fifty Cents for the series of six cards, including directions for painting. The directions for painting this picture will be found on page 117.

lips, hands, fingers, toes, rosy; grass, olive greens; flower, red; wash extending as high as upper end of scarf, pale blue; letters, red; background behind corner of panel, light bluish-gray wash; streaks for rain, darker gray; branch of tree, brown; birds, yellow-brown.

Girl and Poppies (from Series XI, Tilton's Outline Design Cards).—**GIRL:** Feathers left white, pale peacock-blue and green tips. Bow, yellow. Hat, brim very dark red. Hair, pale dull yellow. Waist, dark olive-green. Flowers round skirt, dull red. Green leaves and scroll, lines dull red. Skirt, light olive. Underskirt, dull yellow. Scrolls on underskirt, dull red. Boot, dark peacock blue. Snow left white, with blue and gray streaks. Puffs and ruffles left white. **POPPIES,** scarlet. Further leaves shaded to dark red. Front leaves shaded with dark wash near bottom of leaf, to give roundness. Leaves, stems, and bud, dull green. Centre of poppy, black. Tip of bud, dark brown.

Jonquil (from Series IV, Tilton's Outline Design Cards).—**FLOWERS:** Yellow, light tint (gamboge); same, darker in the shadows, adding a little cobalt in the darkest places. Calyx, green (gamboge and little Prussian blue). **INVOLUCRE AT BASE OF FLOWER:** Light brown (Vandyke, thin) **LEAVES AND STEMS:** Green (gamboge, Prussian blue, and a little crimson lake). Light strongest on upper part of leaves and flowers. Leaves, dark at the base, a strong shadow under each twist of the long leaf. **PANEL:** Pale blue (cobalt). Border, reddish brown (crimson lake and Vandyke brown, thin wash).

Sweet Violet (from Series V, Tilton's Outline Design Cards).—**FLOWERS:** Pale purple (Prussian blue, crimson lake), shaded with darker purple. Stamens, light green and yellow. **LEAVES:** Upper side light green (gamboge, Prussian blue), veined and shaded with the same darker. Under side, use the same colors very thin and add a little crimson lake. **CALYXES:** Light green. The light falls from the right, casting the shadows toward the left.

Geranium (from Series VI, Tilton's Outline Design Cards).—**FLOWERS:** Very pale pink (thin crimson lake), veined with darker shade; paint the shadows on the under sides with bluish-gray (cobalt, gamboge, crimson lake), centres, orange-yellow. **BUDS:** Tips pink. **CALYXES AND STEMS:** Light green (gamboge, Prussian blue). **LEAVES:** Bright green (gamboge, Prussian blue, crimson lake), having at a little distance from the edge a horseshoe-shaped band of lighter green (gamboge and cobalt); this band has occasional touches of reddish brown (crimson lake and Vandyke brown) on either edge. Darkest shadow in centre of lower leaf.

Old Fence with Vines (from Series XXIII, Tilton's Outline Design Cards).—**SKY:** Upper cloud dark bluish-gray (cobalt and light red). Leave



GERANIUM. (From Series VI., Tilton's Outline Designs on Cards.) This series consists of six flower-designs, which may be had on bevelled gilt-edge cards, or on Whatman's paper prepared for water-color painting. Price for either style, Fifty Cents for the series of six cards, including directions for painting. The directions for painting this picture will be found on page 117.

white edge of the lower edge of the upper cloud and those at the right of the card. Lay a faint wash of cobalt over the left-hand part of the sky down to the hill. Here wash the blue out of the brush and lay a flat wash of yellow ochre over the rest of the picture. Let this dry. **DISTANT HILL:** Lay a very thin wash of green (gamboge and cobalt) over the left-hand hill, taking care not to cover the path. Lay a stronger wash of green (Prussian blue and gamboge) on the right-hand hill and the grass in the foreground. "Touch in" sepia in one or two places, particularly in the foreground. **VINE:** Dark red (crimson lake and a little Vandyke brown). Lay a flat wash over the vine, and when dry put in the shadows with a stronger tint of the same. **FENCE:** Brownish (sepia and a little indigo). Lay a wash over the posts and rails. Shadows, dark brown (sepia). **WALL:** Gray (indigo and sepia). Use a thin wash for the light side, the same stronger for the shades, and a very dark tone for the shadows. Finish by indicating a few stones, shadows in the grass, etc., with sepia.

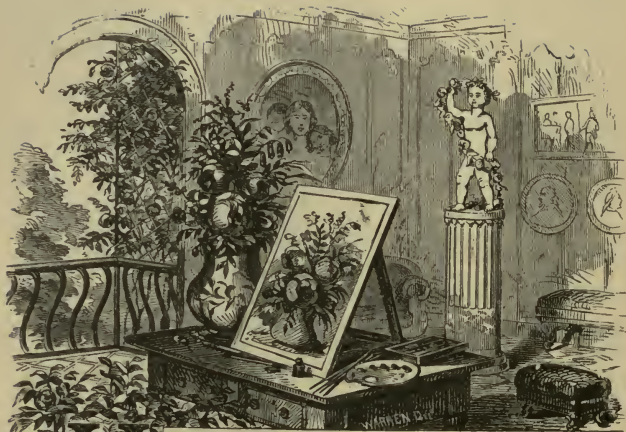
The following chapter on "Painting Photographs in Water-colors" was prepared by a specialist, that is, one who has made the subject a special study; but inasmuch as it was prepared several years ago for a former edition of the same book, it was a question for a time with the editor whether or not to admit it in this edition; it contains, however, so much information which can be made useful in connection with painting the outline designs described in the preceding chapter that we have decided to allow it to remain; one serious objection being that the list of colors demanded is somewhat different from what we have given, and might confuse the pupil, but if the reader has carefully studied our previous directions in this book and as given in "Artists' Colors, and How to Use Them," the little hand-



LANDSCAPE. OLD FENCE WITH VINES. (From Series XXIII, Tilton's Outline Designs on Cards.) This series consists of six simple landscapes, which may be had only on Whatman's prepared paper for water colors. Price, Fifty Cents for the series of six cards, including directions for painting. The directions for painting this picture will be found on page 117.

book which we have before mentioned, he will have learned how to make equivalents for all the colors this chapter will call for from "Tilton's Decorative Art-Color Box," and perhaps a few additional colors. It will also illustrate the economy of procuring the book on mixing colors, which will save its cost many times over in teaching how to make equivalents for colors which would otherwise have to be bought.

The reader will of course understand the difference between an outline and a finished design. We have recommended the pupil to begin with outlines, that is, unfinished pictures: by following the directions which accompany them one will obtain quite effective results after but comparatively little practice in the manner before suggested, viz., the flat and graded washes, while those with more skill and longer practice can finish them into elaborate pictures.



HOW TO PAINT PHOTOGRAPHS IN WATER COLORS.*

IN this chapter we will have to deal with pictures finished in form but not in color; that is, not only the outline, but all that contributes to give it form and shape, light and shade, foreground and distance, etc.

* Many of the principles and suggestions in this chapter apply equally well to painting in general.

A photograph is a fac-simile of a subject just as it appears to the eye in form and shape, but not in color, viz: if you make a photograph of a landscape, it will show the form and shape, relative distances of different objects, with their lights and shadows all represented by gradations of one color.

A rock, a flower, and a distant hill, all appear in the same color, and the object in painting it is to give each subject in its proper color.

Flat washes of thin, transparent colors will be quite effective, as the lights and shadows will be preserved in the same relation, but the following directions will give more satisfactory results.

Use a light photograph for coloring, in preference to a very dark one, and let the general hue be gray, inclining to black in the shadows.

See that it be well defined, that the shadows and middle tints are clear, and that the background is free from blemishes and black and white spots.

The heavy dark tints which prevail in some photographs are badly adapted for fair complexions, as considerable difficulty is experienced in working gray tints over them; indeed, the only way left for the artist is to lighten them up with

a little body color, than which nothing can be more objectionable, because all gray and pearly tints ought to be purely transparent, so that the flesh color may be seen under them. When the complexion is dark, the difficulty is considerably lessened ; for, upon the application of the warm colors, these heavy photographic tones decrease in depth, and assume a color which is not badly adapted for finishing the pearly tints upon. Ladies' and children's portraits should always be lighter in the shadows than the masculine head, for the purpose of giving that softness which is their characteristic ; painters usually throw more light upon them than they do upon the male head, which is better suited to a depth of shadow. Heads of aged persons, of both sexes, should likewise be placed in a full light, as it tends to soften and subdue the prominent markings of age.

Always have a duplicate copy before you while at work, to refer to and assist in keeping the resemblance ; but, if possible, get the original of the photograph to give you two or three sittings, so that you may copy the colors from life, for it must be evident to every one that a good portrait can not be produced unless nature be taken for the model.

It is evident that you must first paint the flesh, thereby partially obscuring the photographic tones and shadows, and *upon* it lay the shadows, gray and pearly tints, as they really do occur in nature, all, in point of color, being widely different from the photographic shades.

If you have never attempted any thing from the life, it will be advisable to procure a photograph from an oil or crayon portrait, and, placing it before you, proceed to copy the various tints as they appear in the picture. It will perhaps surprise you to observe how much of a good painting is made up of shadows, gray and pearly tints, which you will easily detect by moving a piece of white paper about to various parts of the face: you will then observe how much these tints prevail, and how far they go toward forming one harmonious whole.

If you are an amateur photographer, place your sitter a little higher than is usually done, as by that means you will give the neck its due length, and consequently add dignity to the head; for it looks exceedingly ungraceful to see the shoulders upon a line with the ears, which is always the case when the sitter is upon a low chair, and the operator is looking down upon him. Portrait and miniature painters invariably place their sitters higher than themselves — photographers too frequently the reverse.

If you use a screen to form a background, place it some distance from the sitter — say three feet, or even more — to gain space or atmosphere behind the head; and if you introduce curtains, take care to keep them away from the portrait, so that they may not appear to be a part of it. Do not be over-anxious to crowd your picture, as many professed photographers do, with gaudy bed-furniture curtains, old-fashioned chairs, vases of artificial flowers, plaster of Paris pillars, etc., and the usual table placed so conveniently for the sitter to lean upon, and for no other purpose — making the head a secondary object entirely. Such “professors” either know nothing of the rules of composition, or are anxious to give their customers as much as they can for their money.

Preparation for Photographs. — There being some difficulty in apportioning the ingredients for size to harden the surface of photographs, and many chemists having urged objections against its use, as tending to injure the photographic tones, we have, therefore, given the matter a careful consideration, which has resulted in the following receipt: —

Take a piece of white glue, (that made from parchment is the best,) about as large as a nut, and put it into a cup with three table-spoonfuls of warm water, and as much ground

alum as will cover a quarter of a dollar ; stir them well till the size and alum are dissolved, and apply the mixture.

To prepare the Photograph. — Dip a flat camel-hair brush into the preparation, and go gently over the whole surface of the photograph, taking care not to make it too wet. It should be merely brushed over slightly ; but every part must be covered, or the color will sink into the places you have missed.

When it is dry, wash it with a sponge and cold water, to remove any extraneous matter which may have lodged on it. Gum or paste the back, and lay it down on a good thick piece of card-board, and, placing a sheet of writing paper on the face of the photograph, with a silk handkerchief rub it softly, to smooth and flatten it down ; when dry, it is ready to work upon.

Some photographic papers are more porous than others, and will therefore require two coats of the preparation ; but one is generally enough. Wet a corner of the photograph with color, and if it washes off, leaving no indication of a stain, it is in a condition to work upon ; but should the color sink into the paper, it will be necessary to give it another coat. It is essential that the paper be well hardened, as every thing depends upon it ; for, if

it be not properly prepared, it will not take the colors kindly — you will be unable to obtain force or brilliancy, and, in fact, all the labor which you can bestow upon it will be “stale, flat, and unprofitable.”

Albumenized paper seldom requires any preparation, but need only be carefully washed with cold water and a soft sponge; you may then hold it up before the light, and if you observe any transparent spots upon it, like grease, there the water has gone through, and you will find it necessary to touch them with the preparation already referred to.

In the old edition of *Art Recreations* the following list of colors is given as necessary:—

Carmine,	Chrome, 1, 2, 3,	Emerald Green,	Vandyke Brown,
Rose Madder,	Indian Yellow,	Indigo,	Madder Brown,
Crimson Lake,	Roman Ochre,	Prussian Blue,	Ivory Black,
Venetian Red,	Gamboge,	Burnt Sienna,	Chinese White,
Indian Red,	Cobalt,	Burnt Umber,	Constant White.
Vermilion,	French Blue,	Sepia,	

“Artists’ Colors and How to Mix Them”* will teach how to make an equivalent for each from the ten colors in Tilton’s *Decorative Art Color-Box*, except white.

* Published by S. W. Tilton & Co., Boston, and sent by mail to any address on receipt of price.

Constant White is nearly out of use, Chinese or zinc white having almost superseded it; the only parts it is adapted for being the light on the eye, lace, and linen. It possesses little or no body, and is therefore valueless in cloth fabrics.

Chinese, or Zinc White. — This is the most valuable white that a photographic colorist can use: it washes freely, either by itself or in combination with other colors, and possesses this advantage over other whites, that it does not change color in drying. Flake white, which was so much used by miniature painters, invariably dried several shades lighter than when first applied to the paper or ivory, and was liable to change. Chinese white must be kept away as much as possible from any color which has iron in its composition, as it has been found to be affected by it. It is used for lights upon cloth, metal, etc. In its pure state it is shadowed with cold gray, deepening into a black in the darkest places.

Indian Yellow. — A most powerful color, used in flesh and draperies; is permanent, and works extremely well; forms, with indigo and burnt sienna, several beautiful greens, etc.; shadowed with sepia and purple lake.

Indian Yellow, Indigo, and Burnt Sienna are useful for green draperies and backgrounds.

Gamboge, Indigo, and Burnt Sienna form a good green for draperies and backgrounds. Green is not a good color to use too freely in portraits, for unless the flesh be very sallow, it spoils it. Subdue it as much as possible, and shadow with lake and sepia, glazing with Vandyke brown.

Cadmium Yellow. — A very bright color, and its durability may be relied upon; it is serviceable in draperies, and in forming orange tints, but is too powerful for flesh.

Gamboge. — Not a good color for flesh, as it is too brassy; use-

ful in its combination with indigo and burnt sienna, in forming a multitude of greens and browns.

Emerald Green. — Very useful for the high lights of some bright greens and stones in jewelry; when mixed with gamboge it forms a delicate pale green for ladies' dresses, the high lights for which have zinc white and lemon chrome added to the local color.

All green drapery should be kept away from the flesh as much as possible. Shaded as other greens.

Chrome. — There are five different shades of chrome, commencing with a pale primrose, and deepening into a powerful orange; they are all opaque, are good working colors, and are sometimes used in dark flesh tints, and always for the reflected lights under the chin. With indigo they form a number of different shades of green, which may occasionally be used for background draperies, when the photograph is heavy and dark. Chrome is likewise used for gold ornaments, although Roman ocher is to be preferred; when used in its pure state, it is shaded with burnt umber, and, in the darkest parts, burnt umber and lake. High lights, the local color and Chinese white.

Roman Ocher. — Useful in draperies and for strengthening up the yellows in very dark complexions, and is, perhaps, the best yellow for gold ornaments. It serves likewise for all kinds of flaxen hair, either by itself, or when combined with sepia, but is not often used in draperies.

Burnt Sienna is too foxy a color for flesh, although in very dark complexions it is sometimes admitted; but generally the Indian yellow or Roman ocher is to be preferred. If there be an out-door scene for the background of the portrait, this color, when combined with indigo and gamboge, will be found very useful for all kinds of foliage, these three colors forming a number of green tints. High lights, chrome; shadows, umber and lake.

Ultramarine. — For durability and brilliancy, there is no other blue at all to be compared to ultramarine, and although many substitutes have been offered, yet none have approached it in beauty. Cobalt, which is very generally used instead, sinks into utter insignificance when placed near it. Genuine, it is a very expensive color; the imitation is known as French blue. If you wish to substitute ultramarine for cobalt in the grays, you must be very sparing of it, because it is a very powerful color — sometimes used for ladies' dresses and the sky in backgrounds. Cobalt and a little lake make a color approximating to it, shaded as cobalt. High lights, the local color and Chinese white.

French Blue is well adapted for draperies, and occasionally for the sky in backgrounds, but for the latter purpose cobalt is preferable. It is a powerful color, possessing great body, and, like all blues, requires subduing with warm browns. By candle-light it assumes a dark, heavy appearance, almost approaching to black. Treated in the lights, and shaded as cobalt; when the color is used in great strength, the shadows must be powerful.

Cobalt. — Permanent, and a good working color; used freely in grays, pearly tints, and shadows — washed or stippled over indigo for blue skies and backgrounds. Blue, being a cold color, is apt to destroy the effect of your picture, unless you subdue or kill it; negative it, therefore, as much as you can, by toning it down with warm colors, keeping all your shadows of a brownish tint, and leaving your high lights only positive blue. These remarks apply solely to blue draperies.

Prussian Blue is not admissible in flesh tints at all, being liable to turn to a greenish hue. It is very useful for blue draperies, and when mixed with gamboge, bright greens are produced. Prussian blue, and lake or carmine, make a number of purples, violets, lilacs, &c.

Indigo. — A very dark blue, and a good working color; useful, with gamboge and burnt sienna, in forming greens and browns of almost every possible shade; while with carmine it produces purples and violets, and may sometimes be taken, instead of cobalt, for the dark shadows of the face. Indigo and Prussian blue make an excellent color for blue cloth — add a little lake if you desire to produce a coppery blue, which so frequently occurs.

If you would have a blue background of considerable depth, but at the same time not glaring, wash in with indigo, or indigo and lake, and work over with cobalt.

Indigo and Carmine. — An excellent purple, and better adapted for draperies than Prussian blue and carmine, being less gaudy; in both instances the carmine used should be dissolved in ammonia, and no gum added.

Carmine is the most brilliant crimson we possess, and when mixed with vermilion, forms the best color for officers' coats and background draperies, but for the latter purpose it must be much subdued. Spirit carmine and the blues form many useful purples, &c. (See *Prussian Blue*.) Spirit carmine is made in the following manner: Obtain some color in powder, wet it with a few drops of liquid ammonia, and let it stand till the spirit evaporates, and it is then, with the addition of a little water, fit for use. It is better for draperies than the cake color, but it must not be used in flesh tints. Should it become dry and unfit for use, put in a little water to moisten it; there is no necessity for a second application of ammonia, unless it dries upon the photograph and comes off.

Indigo, Gamboge, and Burnt Sienna. — A brown made up of the above three colors is useful in hair, draperies, etc.

Carmine and Vermilion makes, perhaps, the very best color for officers' coats, and draperies of a like description, but it is too

bright to use in the background, unless you subdue it, which may be done with sepia and lake.

Rose Madder. — A most useful color in flesh and carnations, and when necessary, may be strengthened with lake or vermilion; it works well, but possesses little intensity. Rose madder tints are found in youth; but as your sitter approaches middle age, a little lake or vermilion is added to heighten them. Portraits of aged persons have more lake than madder; while in the complexions of children vermilion predominates over the latter color. Rose madder is a good color for glazing the under lip.

Crimson Lake. — For flesh tints and draperies, all lakes are exceedingly useful, not only by themselves, but in their combinations with other colors. When used as a shadow color with sepia, it is better to have purple lake.

Vermilion is frequently used in flesh washes for fair people and children; but it must be with extreme caution, as it is a very heavy color. In its pure state it is a good color for the lips. Elementary works generally give three different vermilions, viz., vermilion, scarlet vermilion, and orange vermilion; but you can make the two last named, by adding to the first, carmine for the scarlet, and gamboge for the orange, which will answer every purpose. Combined with rose madder for children's carnations.

Light Red. — A durable color, and of great use in flesh; with carmine or vermilion, and a little Indian yellow, it forms a wash which, when properly modified, will do for almost every complexion. Miniature painters, with this color, cobalt, rose madder, and Indian yellow, make their gray shadows and pearl tints.

Venetian Red, differing but slightly from light red, may be used for precisely the same purposes.

Indian Red. — A good color for strengthening the darkest shadows on the face, but must be used sparingly, being in its nature

very powerful; has great body, and inclines to a purple hue. It is durable and works well, and when used with lake, is a good color for putting in the upper lip with.

Burnt Umber. — A good working color, but seldom used, except for hair and draperies.

Vandyke Brown. — So named, after the prince of portrait painters, in consequence of the free use of it in his works. It is a fine glazing color, and is well adapted for strengthening the shadows under the nose, glazing the darkest shades of green draperies and the hair. This is, perhaps, the most beautiful brown that we have.

Madder Brown. — A very rich brown, and of great use in draperies; combined with cobalt, it forms many very excellent grays suitable either for the face or background.

All madders are said to be permanent.

Sepia is the most useful brown, no other entering so largely into combination with other colors as this does; with lake, indigo, and gamboge, a pure transparent black is formed, calculated for silks, satins, and black cloth. *Sepia* and lake, again, make the best color for giving the sharp touches about the eyes, eyebrows, etc.; and for the hair it stands unrivaled by any other brown, being useful not only in the lightest, but also in the very darkest tints.

Sepia and Indigo. — A gray formed of the above colors is of use for backgrounds; may be strengthened in the darker parts with *sepia* alone, and warmed with *Vandyke brown*.

Sepia, Indigo, and Lake form an excellent black, used for silks, satins, and as a shadow color for black cloth. With these three colors you may make a black of any required tint. Keep the darkest shadows rather red. Another black is made up of indigo, purple lake, and gamboge, and is equally as good as the former, and used for precisely the same purposes.

Lampblack. — A strong body color ; is chiefly used with Chinese white for black cloths and velvets.

Ivory Black. — Much the same as lampblack, and is occasionally used in lieu of it. It is, however, a little browner than the former ; both work freely.

Choice of Pencils. — Let the pencils which you select be sable, and of a middling size ; it is very injudicious to use small ones, as they impart to the work a harsh appearance, which is by all means to be avoided ; therefore work with a good-sized pencil, the quill being somewhat smaller than a goose or swan pen, and capable of holding a reasonable quantity of color in fluid. With such a one you will be able to give those firm touches which are so much admired by judges. You will, however, sometimes need to use small pencils, in marking in the eyes, nostrils, etc. ; but for all large washes they are worthless. When purchasing pencils, dip them into water, and bring them to a point on the nail of your thumb. The hairs must be all of a proportionate length, having a fine flue attached to the points, and, when moderately full of water, should, upon being bent, spring back to their original form. See that there be no straggling hairs about them, and that they do not split or divide. A few French camel-hair pencils must also be

obtained, for you will find them very useful in laying large washes upon the background where you require smoothness, but they are not elastic enough for general purposes. A flat camel-hair tool, with which to size the photograph, is also necessary.

Coloring the face, etc. — Commence with a large pencil to wash in the flesh tint; go over the whole face, and leave it to dry. Then put in the carnations, but do not be in a hurry to do too much at once; keep all the colors under, for it is easier to lighten up, as you go on, than to reduce them, if they are made too powerful. Put a little color now on each lip; the upper one, which is almost always in shadow, may be laid in with lake and vermilion, and the under one with carmine and vermilion, the latter predominating, if the subject be juvenile. Give the background a wash, and proceed with the draperies. Lighten the carnations, and lay on the yellows, which are perceptible in almost all faces, but more particularly aged ones, about the temples, eyes, and mouth. Strengthen up the eyes, nostrils, and mouth with lake, and do the like to the hair with the proper shadow color, working in the direction of the curls, or in a wavy manner, just as it may be adjusted;

and glaze over the under lip with lake or rose madder, in accordance with the natural tint. The white of the eye, as it is commonly called, varies in color as age advances—in childhood and youth it is nearly a positive blue; gradually it loses that tint, and merges into a pearly tone, while in old age it becomes nearly yellow. For the pearly tone, you will use a like color to the pearly tints of the face, increasing the blue as you approach to childhood, while for aged sitters a pale wash of Indian yellow may be taken. The iris must be laid in with transparent color, then shaded, and afterward finished with Chinese white. The pupil is always touched in with a dark color, and the speck of white is laid on at the last. If the eye be black or brown, the same lights are used as for black or brown hair, namely, light red and Chinese white for the former, and neutral or purple tint and white for the latter.

It is a practice with several miniature painters, in heightening the complexion, to lay the colors in little square forms, working their pencils in various directions, and leaving the interstices to be filled up afterward by stippling. This method gives what is called a *fatty* appearance to the work, and renders it bold and masterly.

Others, again, finish off with hatches, and the crossings of the pencil somewhat resemble the lines in a fine-line engraving of the face, being worked as much as possible in the direction of the muscles. But this should not be resorted to till near the end of the work; for if you begin too early, you will never be able to gain depth, and the more you labor, the more wiry, harsh, and dry will the character of your performance be. When the flesh color has been sufficiently heightened, and is as near to the original as you think you can get it, then begin with the pearly gray and shadow tints, keeping them as pure and transparent as possible, working with a light hand, for fear of disturbing the under color, which must not be suffered to mix with them, or they will become muddy, and consequently lose all their transparency. Grays are not intended to hide the local color, but only to be passed over it as a glaze.

In coloring photographs of ladies, you can not fail observing that their necks are always much lighter in color than their faces, and that the pearly tints are seen in them to advantage; use the flesh wash much lighter for the former than the latter.

Note that the delicate blending of these pearly tints

into the flesh and shadows, gives softness and rotundity to the work ; for if the shadows be left hard against the lights, not being duly graduated into them with the pearly tint, your picture will appear crude and harsh, wanting that connecting link which they form. The palms of the hands and tips of the fingers are generally of a pinky hue, and the backs are much the same in tone as the neck. In your anxiety, however, to make them appear delicate, be careful not to keep them too white, as that will mar your picture. But in many instances this caution is unnecessary ; for unfortunately photographs generally are heavy and dark, so that you will be necessitated to brighten them up considerably.

It may now be presumed that the face is nearly finished ; all remaining to be done being to give the sharp, spirited touches which occur about the eyes, mouth, and nostrils, and impart life and intelligence to the whole countenance. If the original of the photograph be dark, you will use sepia and purple lake in nearly equal proportions for that purpose ; but if the sitter be fair, you must discard the greater part of the sepia.

It should have been remarked before, that the shadow, which almost always occurs under the nose, may be

glazed with Vandyke brown; but be careful not to make it heavy.

The background, hair, and draperies, will next claim your attention; but ere you finish the hair, it will be necessary to complete the background, so that the hair may not be interfered with by the background color coming up to or over it; but let the hair be brought over and finished upon the background in a light, feathery manner. When the background is complete, give the last touches to the shadowed parts of the hair, and lay on the high lights.

No mention has yet been made of gum, which is in request with some photographic colorists, but which had better not be resorted to at all if you can possibly do without it. However, if your work appears dull and spiritless in those places where it should be otherwise, a little gum may be used for the eyes, parting of the lips, hair, and eyebrows. You may either mix it in the color for the last touches, or use it by itself, as a glaze; but do not use much on the picture, for it gives it a disagreeable appearance.

FLESH TINTS. No. 1. *Fair Complexion.* — Light red, a little carmine or vermilion, and Indian yellow; be very careful in using

the latter, for the reasons before specified; and, in the flesh tints of very fair children, allow the vermilion to predominate. Carnations, rose madder, and, if the face be full of color, add a little vermilion to it.

No. 2. Middling Complexion. — Much the same as No. 1, saving that the light red must be in excess over the other colors — carnations, rose madder, and lake.

No. 3. Dark Complexion. — Light red and Indian yellow, or light red and Roman ocher, and if the complexion be generally ruddy, you may add a little Indian red; but it must be sparingly used, as it is a powerful color, and likely to impart a purple tone to the flesh. Carnations chiefly lake; but if the complexion be warm, lake and a little yellow. The carnations for children's portraits are rose madder and vermilion, inclining more to the latter tint. Aged persons have rose madder and a little cobalt, to give a cold appearance to the color in their cheeks and lips.

These tints, Nos. 1, 2, and 3, are indispensable, as general washes, for the purpose of receiving the other colors, which are to be worked over them to bring up the complexion to the life.

Uncolored photographic portraits vary so much in tone, that the beginner will, perhaps, find some difficulty in mixing up the tints for the washes. He must note that the warm-toned ones do not require so much Indian yellow as the cold ones do.

SHADOW, GRAY, AND PEARLY TINTS. *No. 1. Fair Complexion.* — Cobalt, rose madder, Indian yellow, and light red, will produce every variety of the above, from the most delicate pearl up to the strongest shadow color, and are suitable for every complexion. It must be borne in mind that the gray should be kept cool, and the shadows warm, and that in laying them on, particular care must be taken that the under tints are not disturbed, otherwise you will

muddle the grays, etc., and make them opaque, which is always to be avoided, as it is intended to show the flesh color under them.

These tints appear to differ in different complexions, but the difference is caused more through the local color that they go over, than any great alteration in themselves; when the flesh, however, is very powerful in color, the grays, etc., must be stronger than when it is delicate.

No. 2. Middling Complexion Shadow. — Darker than No. 1, and composed of cobalt, Indian yellow, and madder brown. These three colors produce a great number of very useful grays.

No. 3. Dark Complexion Shadow. — Rather warmer than No. 2, having a little more of the Indian yellow added to the cobalt and madder brown. These three tints will answer all purposes in photography. No. 1, with, or, if the paper be of a warm hue, without the yellow, forms a good serviceable gray or pearly tint, useful for all complexions. It may be necessary to remark, that yellow is not so much in request for coloring photographs as for painting on ivory or Bristol-board; the photographic paper, in itself partaking so much of a warm color, renders it less necessary.

Hair Colors. — In coloring hair, never shadow it with the local color; all the shadows must be somewhat different; and the same may be said of the high lights. Upon brown hair they partake of a purple tinge, and the shadows are in general formed with sepia, or sepia and lake; and upon some particular kind of flaxen they incline to a greenish color, which is produced by sepia. Burnt umber is most useful in brown and auburn hair;

and here, again, the sepia and lake form the best shadow colors. A good mixture for black hair is composed of sepia, indigo, and lake, or lake, indigo, and gamboge; the lights slightly inclining to a purple tint, the blue predominating. But black hair is of so many different hues, that it is impossible to give one general tint which will do for all kinds; you must be guided by nature, endeavoring to match the colors to the best of your ability. Put in the general wash broadly, and bring it into form with the shadow color; then lay on the high lights and reflects with the proper tints, mixed with Chinese white. Upon flaxen hair, you will sometimes be able to preserve them; but in consequence of the photographs being dark and heavy, you will generally have to put them on. Be very particular in keeping the hair in masses, and to assist in doing so, use a good-sized pencil to work with, and never fritter it away into little pieces, as if you had determined to show "each particular hair."

Against the background, let it be a little feathery, as it appears in nature, and do not permit it to cut into the face, as if it were glued upon it. For the purpose of assisting the beginner, a few local washes are given.

Flaxen Hair. — The best wash for flaxen hair is undoubtedly Roman ocher, which may be modified with sepia to suit the various shades. A warmer flaxen is composed of Roman ocher alone, both being shaded with Roman ocher and sepia. The high lights for the former are made of Chinese white, mixed with a delicate purple; but if the hair be of a sunny color, then use Roman ocher and white only. Always lay in the shadows first, and then put in the high lights, taking care to keep them thin, working with a bare pencil, so that the color of the hair may appear through them; and in shadowing, also use the tints thin, for the same reason. Never put any white in the shadows; they must always be transparent. Gum is occasionally added to the shadow color, to bring it out; but as it gives a meretricious effect to the work, it is better to avoid it.

Auburn Hair. — Local color, burnt umber, and sometimes burnt umber and lake, according to the particular shade. When the auburn is very warm, add a little burnt sienna to the umber and lake, shadow with burnt umber and lake, and glaze in the darkest parts with a cold purple. High lights, neutral tint and Chinese white.

Chestnut Hair. — The lights much the same as for auburn hair; local tint, burnt umber, sepia, and lake; shadow with sepia, lake, and indigo; in the darkest shadows let the indigo and lake predominate.

Red Hair. — Very red hair is a color which does not often occur, and when met with, subdue or kill it as much as possible, for few people are ambitious of possessing it.

Venetian red and lake, with a little sepia to cool them, form a very good mixture for the local tint; if it be too red, add a little gamboge or Roman ocher.

Should a lady rejoice in this colored hair, keep all blues as far

from it as you can, because their presence only helps to exaggerate its fiery appearance. Shadow with lake and burnt umber; very darkest parts, sepia and lake. High lights, a delicate purple and Chinese white.

Dark Brown Hair. — Sepia alone, or sepia and lake, or sepia and burnt umber; lights inclining to purple.

Gray Hair. — Sepia and cobalt, or sepia and indigo, made into a pale wash; indeed, any of the grays may be used, provided they are in accordance with the color intended to be represented. Gray hair is sometimes of a warm hue, and sepia is a close approximation to it; shadow with sepia.

Black Hair. — The best color for black hair is composed of sepia, indigo, and lake, or lake, indigo, and gamboge, making the red or blue predominate, as it may appear in nature. Keep the shadows of a warm brown tint, and the lights cold, inclining to neutral tint; and sometimes, when the hair is exceedingly black and heavy, the lights are laid in with light red and Chinese white, being exactly the same as the lights for black cloth.

Draperies, and other Cloth Fabrics. — In painting cloth fabrics, it will be advantageous to use the local color at first much lighter than you desire it to appear when finished, as it will permit the folds of the drapery to be discernible under it; but to render the matter as clear as possible, proceed as follows: Take, for example, a black coat to paint; begin by laying in a weak local wash as directed, and when it is dry, go over the folds with a thin shadow color, which will prevent them being

obscured by the next local wash. Having repeated this process two or three times, you will most likely find the coat to be as dark as necessary, but the shadows will be too poor and feeble. You will then strengthen them with sepia and lake; and when brought to the required depth, lay on the high lights with light red and Chinese white, remembering to use a bare pencil and a gentle hand for that purpose, for if you work your pencil about, and press heavily upon it, you will inevitably disturb the local color, and mix it with the lights. These repeated shadowings after each wash would be quite unnecessary did they not serve to retain the photographic folds intact, for if you laid on the local color at once, and as powerful as you desired, you would be almost certain of hiding them, and having them to draw in from your duplicate copy. By laying in the washes one over the other as directed, you gain a texture and evenness of tint which you could not otherwise obtain. If the photograph be bold in the shadows, and bright in the lights, there will be no necessity for going over the former after each wash. All cloth fabrics may be handled after the same manner. You must take care that these under shadowings do not become heavy; they

are only meant to save you the trouble of copying, should the local color hide them, for, as a matter of course, all shadows must be painted *upon*, and not *under*, the color on which they are projected.

A good black for gentlemen's drapery is made of indigo, lake, and gamboge, or indigo, spirit carmine, and gamboge. When you require a blue black, first make a blue purple, and then add the gamboge till the tint is changed into a black. A red black must be made of a red purple, or inclining that way. Miniature painters generally use lamp or ivory black for cloth drapery; but as both of these are body colors, they will hide the shadows of the photograph, which must be kept perfectly transparent, and finished upon with sepia and lake. The shadow tint must in all cases be used rather thin, as it is intended only partially to obscure the local color, not to hide it, which it would do if it were made powerful, besides imparting a hard, patchy appearance to the work.

In shadowing, never work across the folds, but always carry your pencil in the direction that they run, and from, not to, the outline. Your own judgment must guide you in apportioning the sepia and lake for shad-

ows ; some blacks require them to be much redder than others. A camel-hair pencil is better adapted for laying in the draperies than a sable one, because the color flows from it more freely, and the markings of the tool are not perceptible.

Silks, Satins, etc. — The tints for the above are made up precisely the same way as for cloth fabrics, and must be painted in broadly, keeping the lights bright, and the shadows transparent. White is admitted sometimes into the local color for the purpose of forming the high lights ; black silk and satin always excepted, which receive the same lights as black cloth, viz., light red and Chinese white.

Crimson. — Crimson is made of pure liquid carmine, modified with lake for the shadows, and sepia and lake, without the carmine, are used in the deepest shades. The high lights are a little Chinese white mixed with the local color.

Scarlet. — Scarlet vermilion and carmine make the best opaque scarlet for officers' coats, etc., shadowed with carmine and lake, and, in the darkest shades. lake and a little sepia, without the carmine. A transparent scarlet for silks etc., is made of carmine and gamboge, or carmine and Indian yellow, with gamboge, is preferable, shadowed as the opaque scarlet.

Pink. — Pink is simply carmine or lake reduced with water, or Chinese white delicately shadowed with lake. High lights, Chinese white and the local color. Rose and pink madder frequently represent this color, shadowed as the last.

Yellows are shadowed with the local color, modified with umber ; but some pale yellows have a cold gray tint coming against the

lights. The lights upon all yellows are composed of the local color and Chinese white.

Orange. — Orange is made of Indian yellow and carmine or carmine and gamboge. A very good orange is produced by the union of red chrome with gamboge; but it is too heavy for silks.

Green. — Indigo and gamboge form an excellent color for cloth draperies, shadowed with the same and a little burnt umber; the darkest shades have lake and umber or lake and sepia. High lights, the local color and lemon chrome, or the latter alone on the local color and Chinese white. If the green be very yellow, the lemon chrome is the best adapted for the lights; but if it be a cold color, then use Chinese white.

Purple. — Purple tints are formed of blues and lakes, or blues and spirit carmine, and lilacs the same. The purples receive a warm shadow, composed of the local color and brown madder, and if they are very heavy, the dark shadows are brown madder and purple lake. Lilacs have similar shadows, but much lighter. High lights, the local color and Chinese white.

Blues. — Blues of every tint are shadowed with the local color and a little brown madder, and in the darkest places brown madder is only used. High lights, the local color and Chinese white.

Backgrounds. — The best colors for fair people and children are blues, purples, (not bright, but negative,) and grays. Dark complexions may have dark grounds, inclining to red or warm brown; and where the flesh tint is sallow, use warmer colors, — greens approaching to olive, — to throw up the reds in the face to advan-

tage. If the usual curtain be allowed to creep into the picture, make it a connecting color with some other analogous to it in the figure or accessories.

Never paint a bright blue ground and crimson curtain, but keep every thing quiet and subdued, so that the eye may take all in at one glance, having no light patches of color spread over the picture to dazzle and distract the gaze from the head, but let every color blend and harmonize.

The following are a few background colors which will assist the beginner in his work : —

Stone is represented by a tint formed of carmine, indigo, and yellow ocher; and the more distant you wish to make it appear, the more must the indigo prevail. If the photograph be a very white one, it will be necessary to lay a foundation of neutral tint, to support the local color.

Grays : cold and warm grays of many different hues are made with sepia and indigo. The grays which are used in the flesh, will also answer the same purpose. A background capable of many modifications is made of cobalt, burnt sienna, and a little rose madder worked into it.

Madder-brown and cobalt are well adapted for the same purpose, and form good grounds for fair subjects, and may be strengthened in the darkest places with the addition of a little indigo.

Indigo and madder-brown produce a duller gray than the former, and of more depth.

A purple, cloudy ground is made of indigo and liquid carmine or lake ; be very careful not to paint it too bright.

An opaque ground, of a chocolate color, is composed of lampblack and Indian red, and may be lightened by the use of Chinese white.

Burnt umber, chrome yellow, and Chinese white produce a lighter ground than the last named.

Opaque backgrounds are far from being artistic, and are but seldom used ; if very dark, they give the head and figure the appearance of having been cut out and pasted down upon colored paper. If you resort to them, you will require to soften around the outline to take off that effect, and that can only be done by adding a little white to the color. If the background of the photograph be very dark, and you are desirous to make it lighter, lay on the transparent color, and lighten them up by

stippling* some white mixed with the local tint over them, which will have the effect of relieving the head, and whatever parts of the figure you want to bring out. Very dark grounds may also be lightened by dusting some photographic powder colors over them, and they may sometimes be used on the draperies — but it must be held in remembrance, that they are not permanent.

Photographers are, however, getting into the way of producing pictures with the backgrounds entirely white, and consequently they are ready to receive whatever shade of color may be desired, and are infinitely better calculated for artistic display than those heavy grounds, which require considerable discernment on the part of the artist to understand where the outline of the hair terminates, and the background commences.

Paint curtains, etc., over the background, and put on the lights with body colors.

* *Stippling*. — Toward the end of the work you will observe a number of inequalities in the tints, caused by the square patches of color which you have laid on during the progress of hightening the carnations, grays, etc. These require to be filled up by the point of the pencil, with an assimilating color; and that filling up is termed “stippling.” Be careful not to begin doing so till the work is nearly finished; for if you commence too early, you will most assuredly impart a woolly appearance to it, which is by all means to be avoided.

When white spots appear on the background of the photograph, stipple them in with a color that assimilates to it, and then proceed as usual. When the spots are black, you may take them out with a piece of glass paper, and finish as above.

Tinting Glass Positives, Daguerreotype Plates, etc.

—Photographic powder colors are most frequently used for the above purpose, and they are applied to the picture in a dry state with sable pencils; camel-hair pencils being employed for softening, and bringing the work into form and character.

Begin by breathing lightly upon the surface of the portrait, and dip your pencil into the bottle containing the flesh color, and work in a circular direction, pressing gently upon the glass, to cause the color to adhere—the breathing is for the same purpose; then blow off the superfluous powder with an India-rubber bottle. As the color approaches the outline, soften it off with gray, and be careful to preserve the roundness of the cheeks and forehead which is observable in nature, by keeping the high lights in the center, and graduating the flesh tints into the grays and shadows. Next put in the darkest parts of the draperies and hair. When engaged

upon the latter, cause your pencil to move in a wavy manner, as the hair flows. The lights are to be laid in last, with the colors provided for that purpose, and be particular not to soil them with the shadow tints, keeping them as bright as possible. Proceed in the same way with all the other colors, and if the tints contained in the bottles be too powerful for your picture, you can reduce them with *white*, which bears the same relationship to powder colors that water does to the ordinary cakes. When at work, have a piece of black cloth or velvet on the reverse side, which will show up the head to advantage. The same process as the above is applicable to daguerreotype portraits and paper pictures, the breathing on the plate, and the varnishing, alone excepted.

Hitherto glass positives have only been tinted in the manner described, and which the veriest tyro in the arts may accomplish with ease. Artists have given very little attention to the subject, believing that glass pictures would never be much esteemed by the public, because they are taken upon such a brittle material; but in consequence of the increasing demand for them, and the low prices for which they can be obtained, it has

been deemed advisable to say something upon the subject; and experience shows that more can be done with them now than formerly, as they are capable of receiving a considerable amount of finish.

Having put in the general tints with powder colors, assimilating them as much as possible to the complexion, you may finish them up with cake colors, by marking out the eyes, eyebrows, mouth, nostrils, etc., taking care, however, not to run the water colors into the grays or carnations, as they must be kept intact.

These various touchings produce a sharp and spirited effect, and will give to the portrait a most decided and artistic appearance. If ornaments of gold or silver occur, they may be put in with metal.

If glass positives are varnished, which is the work of the photographer, you may use water colors upon them almost as freely as on paper; but in general all that is done to them is merely to apply a little powder color for the flesh, a touch of carnation in the cheeks, and a tint upon the hair, eye, and eyebrows.

On coloring glass positives entirely in water colors, no more need be said than what has already been urged in the case of paper pictures, the manner of working being exactly

the same, the chief difficulty which presents itself being that of getting the colors to flow smoothly; but that is easily overcome by the addition of a small quantity of ox-gall.

Oil colors may also be successfully used upon glass, provided the amateur has a competent knowledge of drawing to carry him through the work; the same objections presenting themselves here as upon paper.



RULES FOR TINTING PHOTOGRAPHS SLIGHTLY. — Having prepared the photograph in the usual way, take a little pink madder, carmine, and Indian yellow, or whatever color most resembles the carnation; lay it on the cheek, and, with a clean pencil, soften it carefully all round the edges, blending the tint into the face. Repeat

the process once and again, till you have obtained nearly as much color as necessary — I say nearly as much, because you have to pass the general flesh-wash over it, which has the effect of darkening it considerably. For

the purpose of softening, it will be as well to have two pencils on one holder. It might appear that putting on the color of the cheek at once, and softening it, would suffice; but you will get it far softer by doing it with a very pale tint two or three times, than you possibly can by making it at once as powerful as necessary; besides, it is impossible to soften a strong color so well as a pale tint. When the color is quite dry, go over the whole of the face with the flesh tint, then put in the hair, eyes, eyebrows, and lips; round off the forehead with a gray, and apply the same to those parts of the face where you observe it to be in nature. If your photograph be a very dark one, you will not require so much gray in it as if it were a light impression; next wash in the background, and proceed with the draperies, etc.

Return now to the face, strengthen the carnations, grays, and shadows, by hatching* delicate tints over them; put the light in the eye and the spirited touches about it and the eyebrows, mouth, etc., and finish off the hair. In dark photographs you will require to lay the

* *Hatching* is that effect which is produced by the crossings of the pencil, after you have given to the head all the larger washes, and must be done in the manner described above. To an inexperienced eye, hatching assumes the appearance of a series of dots.

lights on the hair with body color, as it is generally much darker than it appears in nature. Make out the linen with a gray, deepening it in the darkest parts, and lay on the high lights with constant or Chinese white. Proceed next to shadow the drapery, and when you have obtained the required depth, scumble in the high lights, using a bare pencil and a very gentle hand, as before directed.

Give the background another wash, if requisite, and your photograph is finished.

If there be metal buttons, chains, or epaulets, they must be laid over the dress with body colors; a very good ground for them is red chrome and gamboge, shadowed with burnt umber, and lightened on the lights with lemon chrome and Chinese white.

By the foregoing method, it will be unnecessary to hatch or stipple a great deal, for you will find that the face will come out very soft and round without it; but the effect is far inferior to that produced by the other process.

Prepared Ox-gall. — It is necessary to have a little of the above preparation, but be sparing in your use of it. Too much of it in the colors will cause them to sink

into the paper, and there is no possibility of getting them out again, nor can you wash over the parts to any advantage. Ox-gall can only be of use in the first coloring, to kill the grease; after the photograph has been fairly covered all over, there can be little to apprehend on that point.

When the paper is greasy, and you find a difficulty in getting a tint to run smoothly, rub the point of your pencil on the gall, and mix it up in the color.

NOTE. — Liquid or aniline colors are sometimes used in painting photographs, and are periodically invented and largely advertised under some new and high-sounding name. These colors, under any name, are not reliable, and will not stand the test of time.



THE art of illumination or beautifying text or manuscript by coloring and ornamenting the letters, or decorating its pages, not only by colored letters, but with flowers, birds, in fact, almost any natural object, dates back to the early ages, before the time of the Reformation.

This beautiful art disappeared about the seventeenth century. Its death-blow was received when the printing-press was invented, spreading, as it did, books printed by letter-press and doing away with the old hand-painted or illuminated manuscripts of earlier times. The most beautiful old specimens of illumination were to be found in monasteries.

The monks devoted their leisure to this work, and pages are still extant which show to what a height this art was carried, one page being often the fruit of years of labor. We do not, in this short article, profess to speak of illuminating as it was done then, when even metals rolled to exceeding thinness were applied to the paper, burnished and worked up to a wonderful degree, and their lustre remains to this day to testify to the thoroughness and beauty of the work. To illuminate thus one must be an artist and love the art. There is great scope for originality in designing, coloring, etc., but without any particular talent, but with good taste almost any one may become proficient enough to add not only to his own pleasure and that of others by the beauty and taste of his work, but it may become a matter of much profit to him. To those who have learned something of water-color painting, illuminating will merely be a new method or branch in which to apply what they already know; the colors used being the same, and the treatment of them being similar, so that those who have painted at all in water-colors are quite fitted to pursue the art of illuminating.

The materials required are: for a beginner, water-color paper of firm, close texture, or bristol-board. For more

advanced artists, vellum, or a kind of paper which has a vellum surface, a box of water-colors, ox-gall, tracing paper, some fine camel's hair brushes, principally small sizes, and one flat brush for washing over large surfaces with ox-gall or body-white. One or two pens such as are used by architects. Lithographic pens will be found useful for making fine lines. Some gold paint; some thumb-tacks; a drawing-board.

The first thing to be done is to choose your design. Those who can draw may make original drawings. For those who cannot draw the publishers of this book have prepared designs. Mottoes, designs for book-covers, borders for pages, book-marks, initial letters, etc. These designs are accompanied by full directions for coloring them, and are all ready to be transferred on to any surface required. They have the advantage of giving upon your paper a clear, distinct outline. and all rubbing out is thereby avoided.*

Take the paper or vellum and dampen it a little by laying it between slightly damp cloths. Then lay it upon your drawing-board and with thumb tacks secure the four corners. If you are going to paint upon a long strip put

* See chapter on Transferring Designs.

in as many thumb-tacks as are necessary to hold it firmly. The paper should be wetted more thoroughly than the vellum. Whether you make your own design, or use a transfer design, draw with a medium hard pencil the outline with great clearness and precision. Avoid rubbing as much as possible. On vellum you cannot use rubber, so, unless you use a transferring design, it is best to make your drawing first on thin paper, and then place under your design some impression paper between your thin paper and the vellum, then go over the lines of your design with a pencil. Do not bear upon the pencil, and do not let the hand rest too heavily upon the paper, which is sensitive, and a slight pressure will leave a mark.

The surface of vellum is very delicate, and the slightest speck of dirt shows and is not easily removed. Also vellum has a slight greasiness and is not easy to work upon. To prevent this before drawing in your design, go over the surface with some liquid ox-gall very much diluted in water. To protect the surface from your hand while drawing or painting, take a piece of stiff paper, cut it the size of your vellum, lay it upon your vellum, and in it cut a round hole measuring about three inches across, which hole shall be placed over that portion upon which you wish

to work, and through this you may paint, moving it about as desired. Where you have a large surface to cover with a wash this paper may be dispensed with and an ordinary sheet of paper laid under the hand. In illuminating the most brilliant colors are used, therefore when possible use your bright cake colors without mixing, and never mix more than two colors, as otherwise you would have heavier and more subdued tones than are desirable.

Colors should not be applied thick at first, or they will not dry evenly; they should be applied thinly, and the surface should be gone over several times, allowing each coat to dry before applying another. To insure clearness and brilliancy of tints, they should be retouched as little as possible; above all, they should never be retouched or corrected while drying, as they thus become streaky and muddy, which is fatal to the purity of color for which illumination is famed. In painting different tints over each other (glazing), water-color megilp is very useful; it fixes the color so that it may be washed over freely, and it increases the depth and brilliancy of the colors, so necessary for illuminating effect, without glazing them so highly as gum.

In painting on vellum white must be mixed with a great many of the colors to make them more solid. Where you

wish to have white you must paint on white, as the ground tone of the vellum is quite yellowish, and would not answer if merely left bare. Gilding is very profusely used in illumination. It is used, not only to cover large surfaces, such as the background of a design, but also in the delicate tracery of letters, flowers, etc. This gold can be procured and used like any other water-color paint. After one layer has dried you may paint on another, and in this way successive layers until the gold looks quite bright and solid.

It is needless to suggest the number of subjects to which illumination may be applied. Birthday cards, the covers of books, postage-stamp albums, book-marks, volumes of poems, may be rendered almost priceless by having their pages illuminated richly in borders, headings, initial letters. etc. Illuminating on other materials than paper and vellum may be practised. Satin banner-screens illuminated with mottoes or initials are very attractive. For sizing to mix with water-color for painting on this material, see article on painting in water-colors on silk, satin, etc). All these designs are furnished by the publishers in perforated designs.



PAINTING ON SILK, SATIN, VELVET, AND MUSLIN, WITH WATER-COLORS. — The reader has already been instructed in detail in Water-Color Painting on Paper, and, before proceeding to practise the directions given in this chapter, we wish to remind him that, if he has well followed our previous instructions, he must have learned, in a degree, to paint in water-colors on paper, and now he is only called upon to adapt what he has

learned to do on paper to another material: that is, he has learned how to put his colors on paper, now he must learn what different management it requires to put them on silk, satin, etc. In the following pages we will give information concerning the different processes by which it is done. We have not the space to enumerate all the uses to which painting on the materials mentioned may be put: among them are the decoration of dresses, scarfs, fans, cushions, sashes, d'oylies, tidies, slippers, pianoforte and table-covers, curtains, screens, valances, book-covers, lamp-shades, work-baskets, parasols, and a hundred other things which will readily suggest themselves. The processes are simple and easily learned, and do not demand long artistic training or special ability. A good eye for color, a steady hand, and a fair amount of perseverance are all that is required to insure success.

MATERIALS. — The materials required in addition to what have been given for painting in water-colors on paper, are — Chinese white. This may be had in pans, tubes, or in bottles. Gum-water (gum-Arabic dissolved in water); glycerine, ox-gall. The last two to be used very sparingly, and not at all if the colors work well without them.

Transferring designs which have been mentioned before in these pages, can be made to take the place of a knowledge of drawing in painting on silk, satin, etc., as well as in ordinary painting in water-colors. Indeed, we think they can be used here with advantage by those who can draw, as they will save much time as well as labor.

PROPERTIES OF THE DIFFERENT MEDIUMS USED. — The mediums used with water-colors are additions necessary to secure their perfect adhesion to the materials on which they are employed. They are mixed with the water in which the brush is dipped to liquefy the colors, and each having its especial property, it is requisite that these properties should be understood in order that they may be rightly used in counteracting the defects of certain colors, some of which take too firm a hold on the fabric, while others do not sufficiently adhere to it.

These mediums are four — glycerine, gum arabic, methylated spirit or brandy, and ox-gall.

Glycerine may be used with advantage if the colors dry too quickly, as it retards drying considerably; but for this very reason again it must be employed sparingly, one or two drops in a saucer being sufficient. It has also

in some degree the property of preventing the work from peeling off or cracking, by giving it pliancy.

Gum arabic is useful when the colors, being deficient in adhesiveness, rub off. Sometimes also moist colors contain too much glycerine, and will not dry; this being counteracted by a little gum, they will dry more quickly.

Spirit used in water-color painting has properties opposite to both gum and glycerine. If the colors are found to dry too hard, a little added to the water will correct this tendency by precipitating the superfluous mucilage; and a greater quantity used in the same manner will make them dry with great rapidity. It also deadens the colors at the same time by making their surface dull, while gum and glycerine, by making it shine, will brighten them.

Ox-gall adds little brilliancy to the colors, but used in moderation it facilitates their flowing from the brush, and makes them spread evenly and smoothly. The utmost care however must be taken not to add too much of it to the water, as two drops will be quite enough for a saucer; and in too large a quantity it defeats its own end, as by thickening the mucilage it makes it difficult to spread the tints.

If first-rate colors are used these mediums may not be required, but it is safest to have them at hand. They will be more especially wanted with Chinese white, and their right employment is of so much importance in this case that no time is lost in explaining it thoroughly, as valuable and elaborate work, over which perhaps hours have been spent, may thereby be saved from irreparable injury by the colors peeling, rubbing off, or cracking in every direction.

GENERAL REMARKS. Never touch one color with another until it is thoroughly dry.

Place a sheet of tissue paper under your hand while painting; it will not only prevent the tracing from rubbing off, but also protect the work from spots or marks.

Carefully avoid soiling your fingers with the colors.

Always keep a piece of the material at hand during painting to try the effect of colors. Bear in mind that work of this kind cannot be done carelessly or hurriedly or without due knowledge.

Let it be remembered, too, that lack of success is almost always due, not to the incorrectness of the instructions given, or to faults of the material, but to not knowing how

to work to advantage. Knowledge must be gained from experience. Even the most sanguine should not expect to perfectly succeed at the first trial.

Keep your work at a sufficient height to avoid stooping over it. You will thereby save yourself much fatigue, as it requires close sight.

Always keep two glasses of water for your brushes, one for the final rinsing, as they must be thoroughly cleansed from one color before they touch another.

When putting away your brushes clean and dry them thoroughly, smoothing the hairs to a point, and take care that the points are not bent back, as it spoils them.

When looking at paintings, note the effects of colors, shades, and lights.

Never forget that there is always room for improvement, however well satisfied you may be with your work.

CHOICE OF MATERIALS.—It is possible to use coarse and cheap material for decoration, but it is by no means desirable. The best effects are produced on the finest material, and it would be a pity to waste time and skill on anything else.

Silk needs to be plain, of close and firm texture, to produce the best results. Gros grain and corded silk require more careful work, and even then it cannot be made to look as well as upon plain material.

The most satisfactory grounds for painting on are white, cream-colored, pale blue, or gray. The tint of the material should always harmonize with the colors of the flowers. A bright red or scarlet ground would neutralize bright tints of the same color, and make them look dull and dead. For white flowers, black (not glacé) silk gives the finest effect; for a mixture of white and colored flowers, a pale shade of blue gives exquisite results.

CHOICE OF DESIGNS.—Nothing is more fitting or looks prettier in this style of decoration than flowers, leaves, and grasses.

As a rule, for the decoration of dresses, a design that does not give any large masses of color is best. The color of the material has, of course, much to do with the choice. Tiny bouquets of daisies, some perfectly white, and others tipped with pink, would look well on a gray or pale blue material. Fuchsias would look well on the trimming of a dress of dark or light satin. Poppies and corn, dandelions or autumn leaves would harmonize with a dark green

or black ground. Graceful undulating sprays of passion flowers and leaves, or lilies, corn-flowers, jasmine, acorns and leaves, honeysuckle, ivy, blackberries and leaves, orange blossoms, sprays of forget-me-nots, ferns, and ash-berries, all can be used in various portions of the costume, according to the taste of the artist. For other purposes, such as screens, curtains, banners, etc., a landscape in miniature, a brightly-tinted butterfly, birds, a sea-piece with white-sailed ships, a swallow flying over water, or branches of apple-blossoms, all, or any would be appropriate designs.

PAINTING ON SILK. — There are four methods of painting on silk. That formerly used, but now pretty much done away with, is by using nearly dry water-colors without any preparation of the material. The effect is delicate, but the process requires a good deal of artistic skill. Second, the silk is sized, and the colors, mixed with Chinese white, are laid on as dry as possible. Third, the tints are all made by the addition of body color, without sizing or otherwise preparing the material. Fourth, the design is laid upon a ground prepared with Chinese white. We give the two simplest and most effective of the above processes.

First Method. The silk may be sized with either of several preparations, which are here described.

1. Beat the white of an egg to a froth, and apply evenly to the entire surface of the piece of silk to be painted.

2. Dissolve a piece of alum as large as a hazel-nut, with as much isinglass, in half a pint of boiling water.

3. Put an ounce of gelatine or isinglass in a cup, with enough cold water to cover it. Let it soak for an hour and add a pint of boiling water.

These last two preparations should be perfectly clear and free from either grains or lumps. Their use, it must be remembered, destroys the lustre of the silks upon which it is used. They should be applied hot with a brush or sponge.

Before the silk is sized it should be pinned smoothly and tightly to a drawing-board, with a piece of thin, white paper underneath.

The brush or sponge should not be rubbed back and forth over the silk, but drawn smoothly from left to right, going over the same place but once, yet wetting it thoroughly.

The material must be perfectly dry before proceeding to sketch or transfer the design for painting. Upon the

ground so prepared, water-colors may be used without further preparation. They must be very carefully handled, however, with as little moisture as possible, and every tint used should be allowed to dry before another is put on.

Second Method. The silk should be stretched upon a drawing-board precisely as in the former instance.

The design is then carefully drawn or transferred to the material in outline.

A quantity of Chinese white, mixed with water-color megilp to about the consistency of fresh cream is then carefully and smoothly applied to every part which is to receive color, so that when it is dry it will form a foundation for the reception of the different tints. It should not be too thick, as there would then be danger of its cracking; yet it must completely cover the design.

When this coating of white is perfectly dry, the colors may be laid on. They should be as dry as possible, and care should be taken not to work them too much. They should be put on with careful touches and not meddled with afterwards. In this way, pure, bright tints can be had, without any admixture of body color.

Third Method. A third method, practised in England,

and followed to some extent in this country, claims notice in this connection. Very good work has been done by it, but it is more "fussy" than the process just described, and its effects are hardly as brilliant. The method is as follows: —

All the colors used must be mixed with Chinese white in the following manner:—

Place a small quantity of the color on the palette by gently squeezing the tube, and add as much white as will make it of the deepest shade required. Proceed with the color so mixed to fill in all the places in the design in which it is to appear.

Next add as much more white as will bring the color to the second shade, and lay this where it is required; let these dry thoroughly.

Now put in the gradations to the lightest tint, by adding more and more white with each as they are laid on, and finally add the highest lights with pure white. This must be done cautiously, as too much white will make the painting look chalky.

The painting is now to be completed by the addition here and there, as they are wanted, of strokes and touches of the colors unmixed with white, and used rather dry. These

will give depth to the shadows, and as the effect depends on them as much as on the high lights they must be put in with equal care. Too many will make the work heavy, but at the same time with too few it will look poor and flat; and it must not be forgotten that, the whole coloring being opaque, the lights are reflected, not transparent. The positive tints of each color must be seen in the half-lights, and shadows be put in with the complementary colors.

PAINTING ON SATIN.—Painting on satin is not as easy as painting upon silk, although the processes are very similar. The materials should be of the finest, and very closely woven, and there should be no knots or inequalities in the surface. In selecting it, hold it up horizontally between the eye and the light. If the face is not perfectly smooth and free from the woolly appearance, which is often seen in poor satin, reject it at once, for it will be impossible to secure good effects.

Satin should never be wetted or sized. If the material is dark or tinted a preliminary ground of Chinese white should be laid on, as already described, to form a light background for the color. On white satin it is not necessary.

PAINTING ON MUSLIN. — Painting on muslin is done in precisely the same manner as painting on silk, only far less care is required, and as a consequence the work may be done with greater rapidity. Any kind or color of material may be used, although white is preferable.

As sometimes pieces of a yard or two in length are used, the ordinary drawing-board is dispensed with, and a piece of smooth pine board of convenient length substituted. This is first covered with white paper, and over it the material is tightly and evenly stretched.

The design is then transferred by means of the perforated patterns, or drawn in with a pencil. A foundation of Chinese white is then laid on. While it is moist, the lower part of the material should be loosened from the board, and the pattern, so far as finished, lifted up so that what has come through shall not adhere to the paper.

Hold the material by each side up from the board until it dries, taking care meanwhile to keep it stretched between the two hands, so it will not cockle when dry. The material may then be again laid upon the board and stretched as before, and the work proceeded with.

When the foundation color is laid on and dried, the details may be worked in in color, as in the other processes.

PAINTING ON VELVET.

THOUGH velvet is a textile fabric, it differs from silk and satin, inasmuch as the latter have a smooth surface to receive the color upon, and velvet has a thick pile, into which it sinks. In painting on silk and satin the beauty of the work depends mainly on the brightness of the lights, and in painting on velvet on the depth and softness of the tints; and while in one case our care is exercised in keeping the paint laid on from cracking, in the other it is chiefly taken to prevent the pile from becoming matted.

Velveteen, or cotton velvet, as it has a shorter pile, is better adapted to receive wet color than silk velvet, but a practised hand will be able to paint on silk velvet, and even plush also. The old-fashioned velvet painting was all done on white velveteen, but cream-colored or pale blue, or indeed any light tint, makes a better ground than dead white. Dark or black velvets will show in the coloring, and it is, of course, impossible to cover the dark ground with Chinese white, which would mat the pile.

The material being chosen, it is pinned out on the

board like any other fabric, but not sized. The outline must not be drawn with a pencil, as it would make deep indentations, but it is pricked out on paper, and being secured at the corners to prevent its slipping, powder is sifted through the holes on the velvet. It is, however, far better if the artist is sufficiently skilled, to commence the work without any outline at all.

The painting must now be commenced. The brushes used are balled scrubs, and they are made of bristles, perfectly round, and cut off even at the ends, not pointed as water-color brushes are. Three will be required.

The best moist colors may be used; with just sufficient spirit, either hartshorn, sal volatile, or spirits of wine, added to make them work in the brush. Some artists use powder colors, moistened in the same way, but they are not necessary. It must, however, be remembered that much wet will destroy the pile, and that bright colors are necessary, as, the velvet absorbing them, they always look duller than on silk or paper. But no gum must be mixed with them.

There must be a sheet of tissue-paper in readiness to rest the hand upon and to cover all the velvet excepting the part to be painted, and the colors being mixed, the

scrub is dipped well into it, and allowed to drain, so that every part is full of color, but not dripping. It is used upright, and taken back-handed, coming out between the third and fourth fingers, as it is held by the Chinese, and thus brushed over every part of the design where the color in it is required. This must not be touched again until it is dry; but a second scrub meanwhile may be filled with another color, and the work proceeded with.

The tints will probably all look very dull, and when they are thoroughly dry, they must be brushed over again. As the coloring is from light to dark, and not, as in body-color painting, from dark to light, the first shades laid in must be the lightest, the second the next darkest, and so on, until as many coats have been given as necessary. It gives transparency to the edges of the petals of flowers if the second coat ends just inside the first. To give minuteness of detail is impossible in painting on velvet; the effect aimed at must be depth, softness, and richness of tone. Small markings must be put in with the side of the scrub.

It is better to put all of one color in at once, leaving others to be painted afterwards, and, between using the various colors, the scrub must be well rinsed in water and dried.

Some artists think that definiteness of outline is secured by the use of what are called "Formulas," or "Theorems," which are designs cut out and laid on the velvet, the color being brushed through the openings. Any painter can make these for himself by drawing his designs on paper, and then carefully cutting out all inside the outline; keeping the cut edge true and smooth.*

All painting on velvet is, from the texture of the material and the softness of the tints, well suited for representing flowers, butterflies, and some small birds; but it is equally unsuitable for anything beyond the merest suggestion of landscape as an accessory to the birds or the butterflies; the painter who attempts it, therefore, will find his time and patience completely thrown away.

The following article on "Theorem Painting," which appeared in a former edition of "Art Recreations," seems to be directions for doing the same style of painting on velvet, and as it contains some information not given in the previous instructions, we will give our readers the benefit of it.

* See chapter on Theorem Painting, which gives full directions how to make these.

THEOREM PAINTING.

THIS style of painting is done under several names, viz., Theorem Painting, Poonah Painting, Oriental Painting, Formula Painting, Stencilling, etc. It is better adapted to fruits, birds, and butterflies, than to landscapes and heads. It will enable you to paint on paper, silk, velvet, crape, and light-colored wood.

TO MAKE HORN PAPER. — Take equal parts of copal, mastic, and Japan varnish; add to the mixture half as much balsam of fir as there is of either of the varnishes, and a piece of white wax the size of a thimble; simmer these together till the wax is melted. If the composition is too thick, add a little spirits of turpentine. Put it upon one side of the paper while it is warm, the paper having been previously prepared with painter's oil, to make it transparent; the oil must be put upon both sides of the paper, rather warm, and the whole of the paper lie together one night; then wiped with a cloth to absorb the oil on the surface, and dried one week in the sun before varnishing. Each side of

the paper must be varnished twice, and the greatest care taken to dry it well.

Trace the picture you intend to copy on white paper, with a soft lead pencil, then mark those parts which do not touch each other with a figure 1. Lay the horn paper over the sketch, and trace with a sharp-pointed penknife, or large pin, all the objects marked 1. Mark another piece of horn paper for theorem 2, and cut again; thus continue till you have enough theorems cut for your whole picture. Of course, it will require much more time to cut a set of theorems nicely, than it would to draw one picture; but remember that a good set of theorems is equal to twenty-five or thirty sketches. The durability of your theorems will depend upon the care with which you treat them.

Do not attempt to paint with less than a dozen stiff brushes, because you must have one for every color you need to use. Put a few drops of water on your palette with the end of the brush, to avoid dipping the bristles in water.

Lay the theorem on the paper on which you intend to paint. (Good drawing paper is best for the first attempt.) Press the theorem firmly down with weights at each corner, and proceed to paint.

Commence with a leaf; take plenty of paint, a very little moist, on your brush, and paint in the cut leaf of the theorem; hold the brush upright, and manipulate quickly with a circular motion. It is best to begin at a little distance from, and work toward the edge; if you take just enough paint, it goes on softly and smoothly; if too much it looks dauby; if too little, spotted.

To shade the leaves, cut bits of horn paper on the edge, in the form of the large veins, and laying on the leaf already painted, paint from this edge into the leaf; slip the paper, and paint other veined parts in the same way.

If successful with a leaf, try a grape. We paint first purple, then blue, and finish off with carmine.

On removing the last of your theorems, if you see any inequality in the painted parts, lay the theorem on again and correct; if any spaces, fill up by dotting in with a fine brush. All stalks, fibres, dots, etc., must be put in with camel's hair pencils.

In many parts of a painting, the effect is heightened by striking on paint here and there with the stiff brush, and blending the edges together to produce softness.

This style of painting is well adapted for painting on

wood, velvet, silk, satin, crape, etc. Directions have already been given fully in the chapter on this subject, but we rehearse them briefly here:—

TO PAINT ON WOOD.—Choose hard wood, of light color; paint as above, and varnish when done.

TO PAINT ON VELVET.—Select firm, white cotton velvet. Use the paints a little more moistened.

TO PAINT ON SILK, SATIN, AND CRAPE.—Size the parts to be painted with gum arabic, or isinglass (see “properties of the different mediums used,” in chapter on painting in water colors on silk, satin, etc.), and proceed as with drawing paper. We have seen ball dresses painted, with belts and neck ribbon to match; also white crape dresses, with vines of gold and silver. See article upon “Gilding.”

PAINTING IN WATER-COLORS ON WOOD.

THOSE of our readers who have practised the lessons which we have given for Water-Color Painting, will be able to paint on wood.

The same sizing is used to prepare the wood before painting, as is recommended in silk-painting.

White holly wood is generally chosen. It should be close in grain, so as to give a very fine, smooth surface. The outline of the design should be first drawn in pencil. The artist should not attempt to put on a large even wash of any one color, as it will be very streaky unless so light as to be almost imperceptible; for instance, a very pale brown for a background to relieve white figures. All white parts should be painted with white, as the wood is not white enough to leave as a substitute.

Almost any subject is appropriate for painting on wood, figures, landscapes, or fine conventional designs to imitate inlaying, done in colors to represent different woods,

etc. To those who cannot draw, or wish variety in their designs, the perforated patterns, such as are used for the silk, are recommended, as it is difficult to make clear outlines in pencil without some rubbing out, which injures the texture of the wood very much for laying on the color. An infinite variety of articles may be made, of the same description and general style as those suggested in the article on drawing on wood. After your article is painted, to preserve it from dirt, dust, etc., put a very thin coat of white shellac over it. You may afterward rub this down with a fine rag wet with linseed oil and dipped in rotten stone. This will polish it.

PAINTING IN WATER-COLORS ON MARBLE.

A SMOOTH piece of unpolished white or delicately tinted marble makes a very pretty paper-weight. Any stone-cutter will make one of the desired size. The paints should not be put on very wet, as they will spread. Draw your design first very lightly with a pencil, as rubbing out makes the marble smutty. The perforated patterns may be used. If the pencil marks are rubbed off, it should be done with a damp sponge, and then wiped with a clean, dry rag. A little soap may be used. Do not have your paints too wet — not using sizing unless it is found that the colors run, as they will, on some marbles. Then proceed to paint in water-color as directed in previous chapters on other materials. Birds, flowers, landscapes, marine views, figures, etc., may be also painted on this material. By working very carefully, you may also draw with a pen and india ink or sepia, upon marble. Be careful not to have too much ink in your pen.



TAPESTRY PAINTING.

THE existence of tissues in imitation of paintings, made by the combination of many-colored threads, has been traced back to the remotest ages—to the time of Babylon. The Greeks and most of the eastern nations possessed the art of making them. In the earliest portion of the middle ages we hear of these tissues, or tapestries. They were woven or embroidered by hand, at first, by the noble ladies and by the monks and nuns, but were so prized and sought after that manufactories were established, skilled designers and workmen secured, and the result was that ever since no hangings have been prized

as highly or are as rich and beautiful as the tapestry hangings dating back into the Middle Ages, and still ably represented by the Gobelins, Beauvais, and Savonnerie manufactures, which at present represent the most advanced phase of tapestry fabrication in point of beauty of effect. These tapestries are fabulously expensive, and, much as many may desire them, they can be purchased by only a few. This led to the idea that something resembling tapestry could be produced by means of paints upon canvas prepared for that purpose. This idea is not new, however, but dates back to the fifteenth century, some examples still being in existence. This invention is a boon to architects, decorators, etc., and also to amateurs, who in this way can have painted hangings, possessing all the merits of tapestry, at a comparatively slight cost, and at the same time can have the pleasure of painting them themselves. The process is very simple, and we have endeavored to render it within the reach of all by our method of giving the following directions. Tapestry painting consists in drawing a design on the tapestry cloth in charcoal and then coloring it with liquid colors, applied with a brush, very much as in water-color painting. In fact, to one who has painted

in water-colors, tapestry painting will be very easy, for it is almost exactly like it, the colors being diluted with water and applied with brushes in very much the same way. The names of the colors correspond very nearly to those of water-color paints, and the same colors combined give the same results. Those who can draw may draw their own designs, — flowers, conventional designs, figures, birds, landscapes, etc., either making a copy or an original sketch. For those who cannot draw we have designs all prepared to transfer immediately to the cloth in all these styles. These will be found much better, even by those who can draw, as they transfer the lines clearly and cleanly upon the cloth, which is a very necessary item. The list of articles is as follows: —

TAPESTRY CANVAS. — This should be kept from the dust when not in use, and be shaken or beaten before using, for dust dulls the colors. Our experiments were made on No. 19.

A STRETCHING-FRAME. — A good size for ordinary work is three feet three inches by one foot four inches. It is made of pine, like a picture-frame, about three inches wide, and bevelled down from the outer edges so that the canvas, when stretched upon it, only touches at the outer edge. A

stretcher may be made any size required, however. When it exceeds a yard in width it should be strengthened with cross-pieces.

COLORS (LIQUID).

BLUES.			GREENS.
Cobalt.	Red Brown.		Vegetable Green.
Turquoise Blue.	Vandyke Brown.		Emerald Green.
Ultramarine.	PURPLES.		Prussian Green.
Prussian Blue.	Violet (bluish).		Sap Green.
Indigo.	Purple Violet.		Olive Green.
	REDS.		YELLOWS.
BROWNS.	Carmine.		Chrome.
Sepia.	Rose Madder.		Golden Yellow.
Raw Umber.	Carmine Lake.		Cadmium.
Cassel Earth.	Vermilion.		Raw Sienna.
Burnt Sienna.	Red Lead.		

These are all that are necessary for ordinary work. For those who make an extended study of the subject some other colors might be added to the list as they feel the need for them. *Pearl-ash* and *picric acid* are also used, the former to remove color sometimes; the latter, on which water is poured, gives a solution to use in mixing colors and for washes.

POTS. — A few pots of porcelain or glazed earthenware are necessary. Never use metal, as it affects the colors. A couple of them are for holding water to wash the

brushes, and others for clean water to mix your colors or thin them when required, etc.

BOTTLES. — Clear glass bottles, with glass stoppers. The stoppers should be rubbed with grease, or they may stick. These are for mixing your colors in. As your colors accumulate, the more bottles you will need, for you will often want many shades of the same color (and although you can dilute a color thus: if *dark* blue is left in a bottle make it *light* blue by the addition of water; still you can only do thus when you are quite through with using your *dark* blue). These bottles should have large necks, so that you can dip your brushes into them easily, and should not generally be more than four inches high. After you have mixed your colors in the bottles it is as well to label them *immediately* with the name on a strip of paper gummed to the bottle, as some of the colors look so differently when mixed in the bottles from what they do on the canvas; thus raw umber and raw sienna are apt to look green when mixed with water. Name the colors as most convenient to yourself, either the mixture, thus: turquoise, a little chrome, and a little raw umber; or, “dull olive green.” These supplies are good to have on hand, as, when you have them, the next time you paint you will be all pre-

pared. *Keep them tightly corked* when not in use.* The same colors may also be used for painting photographs.

A Box.—Several boxes have been invented, in different styles. For those who do not care to go to much expense, a box to hold the bottles is enough. They are very apt to tip over when you dip in your brush if they sit about on a table, and as the color stains it is rather risky. A square box large enough to hold the colors in use, divided into squares large enough to hold a bottle each, made by intersecting partitions, with or without a cover, is very convenient. The name of each color you may print with ink beside the bottle upon the upper edge of the partition.

BRUSHES.—Three medium length camel's hair brushes of different sizes, for fine and outline work.

Six short-hair, round, bristle brushes of various sizes to lay on flat tints.

Six tapestry brushes (made on purpose for this work) for large washes, skies, etc. These brushes should be as hard as possible when new, and they will improve by use. One set of brushes should be kept for each line of colors—one for greens, one for blues, one for browns, one for reds,

* For price lists and further information apply to F. W. Devoe & Co., New York.

one for yellows. These brushes, while you are using them, should be allowed to stand in a pot of water. It washes the color out of them, as soon as you have used them. Renew this water often. If you put on any dark colors, and find it hard to get the brushes clear of this color, alcohol will cleanse them. The brushes should be kept in a long box to keep them free from dust when not in use.

SPONGES. — Two small sponges of close texture are required, one to wash out color on the canvas when necessary, one for wiping the brushes.

A MAHL-STICK to rest the hand on is needed. Any light, straight stick will do if you have no regular mahl-stick. Let the upper end rest on the frame, and hold the lower end in your left hand. It will serve to support your right wrist upon, and you will not be obliged to rest your hand directly on the canvas while drawing.

THUMB TACKS, or ordinary tacks, are needed to tack your canvas on the stretcher.

You will now stretch the canvas on the frame. If you have a large design, the size of your frame, cut your canvas the requisite size and tack it securely to the frame, drawing it over the edge and tacking it along the under

side, *not* on the upper surface. *Be very careful* not to skew your canvas, but have the ribs or cords of the material *perfectly straight and even*. Do not stretch it too tightly, or you must allow for shrinkage after it has been wet with the paints.

Should you wish to make a small design, smaller than your frame, you may, if you wish, stretch a whole piece of canvas the size of your frame, and paint only that portion which you require for your small design. If, however, your pieces are already cut small, you may stretch them across the narrowest part of the stretcher and tack them; then with a large needle and some carpet-thread you may fasten it at the side or sides as in the picture. The ribs of the cloth look better if they run across, from side to side of your design.

Gilding is sometimes used with very brilliant effect in tapestry. Sometimes the background is gilded to look like cloth-of-gold.

Size the part to be gilded with gold size, and then dust gold powder over that part with a camels' hair brush. When dry blow off the superfluous gold dust.



POTTERY DECORATION.

PERHAPS the simplest and most easily acquired form of pottery decoration is the ornamentation of terra-cotta ware, that is, the common red pottery, such as flower-pots and cooking utensils are made of. It can be decorated with oil or water colors, does not require baking to hold its decoration, and when completed is very pretty, and may be useful.

It will be our endeavor to give clear and thorough instructions in the first step, because, —

First. Any one without previous instructions in, or knowledge of, drawing and painting, may be able to produce quite artistic ornaments in pottery decoration.

Second. Careful and attentive practice in the first step will prepare the pupil to advance, without further instructions than he will have gained by such practice.

Third. Practice in these lessons may be had, as we shall show, at a trifling expense, and will prepare the pupil to take up any form of decorative art.

The materials required are inexpensive, viz.:—

A hard lead pencil;

A common four or six-inch flower-pot;

Some fine sand-paper, and

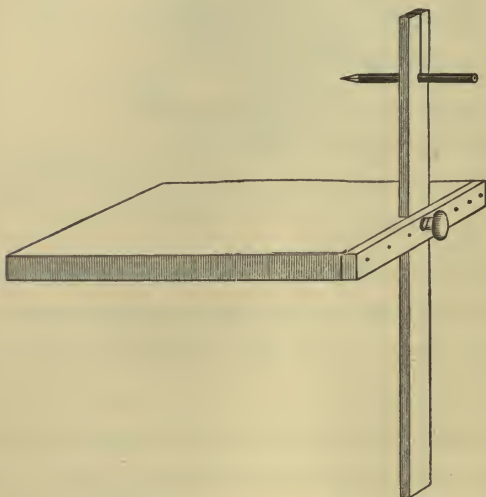
“The Platform,” which we will show an illustration of, and describe further on.

With these simple materials the pupil may practise weeks and months with no further expense, because, when the flower-pot is covered with pencil marks, the sand-paper will rub it clean again.

The amateur will understand, that before decorating a vase with paint, it will be advisable for him to draw his design on the vase with a pencil. This will give guide lines to work by, which the painting will cover, but we wish him to practise sufficiently with pencil and flower-pot in the first place, so that when he shall attempt to decorate a vase, he will be successful. There will be no sand-paper

then to fall back upon to remedy errors, because a terracotta vase, although made of the same material, is so much finer in texture and finish, that sand-paper would ruin it.

After we have laid out a course of practice lessons for lead pencil work, we will show how paint may be used.



THE PLATFORM.*

THE cut here figured illustrates itself. It has a movable bar, held in place by a screw, and is fitted to hold a lead

* Supplied by S. W. Tilton & Co., Boston. Price, 50 cents; or 75 cents, if sent by mail.

pencil. It was invented expressly for drawing bands and lines around terra-cotta vases. By adjusting the movable bar in any position desired, a vase may be divided into sections by lines and bands, which may be filled in solid with paint or with simple and easy figures,

The first lesson will be to draw a series of bands around

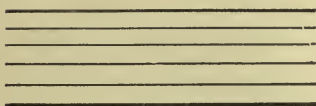


Fig. 1.

the vase or flower-pot, as seen in figure 1. Sharpen and keep a fine point on the pencil, which must

be very hard, as the gritty surface of the flower-pot would wear down a soft pencil too rapidly, and prevent one's getting fine and delicate lines. Place the flower-pot on the platform; then arrange the bar so that the point of the pencil will touch the flower-pot where the line is to be drawn; revolve the pot slowly, with the point of the pencil pressing against it until the band is complete. For the next band, raise or lower the vertical bar to the position desired, and proceed as before. The difficulties to be overcome in this lesson are: first, the management of the pot or vase, which should be kept at right angles with the pencil while being revolved; a very little practice will enable the pupil to hold it in the proper position. Second, in making true

and delicate lines. To do this, keep the pencil well-pointed or sharpened, and in revolving the vase, avoid pressing too heavily against it. This lesson should be practised until the pupil can draw a line of uniform size around the vase, which shall end at precisely the same spot where it was begun. After covering the flower-pot with lines, rub them off with sand-paper, and begin again.

For the next lesson, draw with the platform two bands, half an inch apart, and between these draw lines of different lengths, as in figure 2.

Proceed in this way: first draw on paper a copy of the lesson, — that is, a

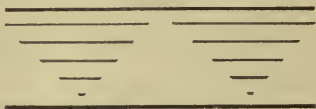


Fig. 2,

continuous row of lines which shall be, by actual measurement, half an inch long, with one-eighth of an inch space between them. This is to be reproduced on the flower-pot without the use of a rule or measure.

[NOTE. — Each of the following lessons is to be done in the same way; that is, first make a copy of the lesson on paper by actual measurement, viz., with a rule; draw the parallel lines four to six inches long, which should be just a half an inch apart; then within these two lines draw the lessons as given, using the rule to measure the space and to draw by. This the pupil may place before him as his copy. The lesson will be to reproduce the copy on the flower-pot without the aid of rule or measure. Of course he may use the platform to draw

the bands with, but everything else in the lesson must be done free hand. If the pupil will follow our advice, and practise the lessons on paper besides, he may do them entirely in free hand, as the object is to teach him to measure distances correctly by his eye, and to gain a muscular control of the hand.]

Continue the lesson by varying the length of the lines and space left, until the pupil can draw at will lines of any

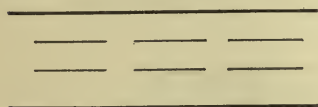


Fig. 3.

length, from a dot to an inch.

Another form of the same lesson may be seen in figure 3. Draw two bands as before, and between them draw two rows of parallel lines, of equal length, with equal distance between them. Afterwards connect them at the ends by vertical lines, as seen in figure 4.

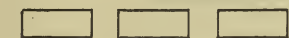


Fig. 4.



Fig. 5.



Fig. 6.

two rows of dots, a quarter of an inch apart, as in figure 5. Connect these by oblique lines, running from left to right,

as in figure 6. Then try the same lesson, connecting the dots by oblique lines running from right to left, as in figure 7. When the pupil can draw the oblique lines one way



Fig. 7.



Fig. 8.

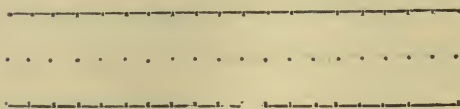


Fig. 9.

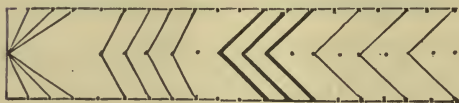


Fig. 10.

as well as the other, he may try both together, as in figure 8. This makes what is called lattice-work, much used in many forms of decoration.

Once more draw the two bands as before, and between them three rows of dots, as in figure 9. The dots should

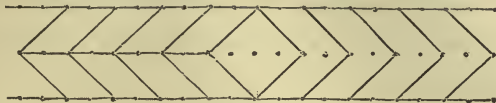


Fig. 11.



Fig. 12.

Fig. 13.



Fig. 14.



Fig. 15.

be one-eighth of an inch apart, and form guide points for drawing the designs shown in figures 10, 11, 12, and 13.

Next draw three rows of dots, a quarter of an inch apart, as in figure 14, and finish with vertical and horizontal lines, as in figure 15. This will give one form of the Greek fret,

which is used with variations the world over for borders in every form of decoration. We say one form of the Greek fret, because the changes which can be worked into it are almost innumerable. A band may be drawn at the top and bottom, if desired.

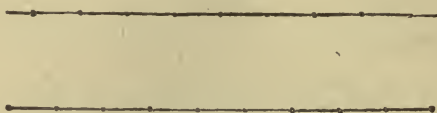


Fig. 16.



Fig. 17.



Fig. 18.

Again draw the two bands, as directed in previous lessons, and two rows of dots, as in figure 16. It will be observed that the dots in the upper row are not directly over those in the lower row, as in previous examples, but are arranged so that, if connected with oblique lines, they will make the design shown in figure 17.

By repeating the same example, and omitting the top band, the design shown in figure 18 will be obtained. This design is much used as a base decoration for vases.

The dots which have been used in our lessons are for guides, and only intended to be used in practice work. After the eye has been trained to measure distances correctly, they will not be needed; or, if used, they should be made so small that the decorations will entirely cover them.

Our examples have all been given as half-inch borders. They can, of course, be made larger or smaller, as the decorator may desire. Other combinations of straight lines can be made to almost any extent, as the pupil will find when he attempts to invent designs of his own.*

To continue these lessons in detail through curved lines, light and shade, and perspective, would require more space than we can give in this book, and it has been thought that the amateur can profit more from thorough instruction in the first step, than by brief mention covering more ground.

Our instructions have been carefully considered, so as to benefit those who do not care to learn to draw as well as those who do.† All of the examples of borders which we

* In practising these lessons on a vase, allowance must be made for the irregular surface. For further information on this subject see chapter on drawing.

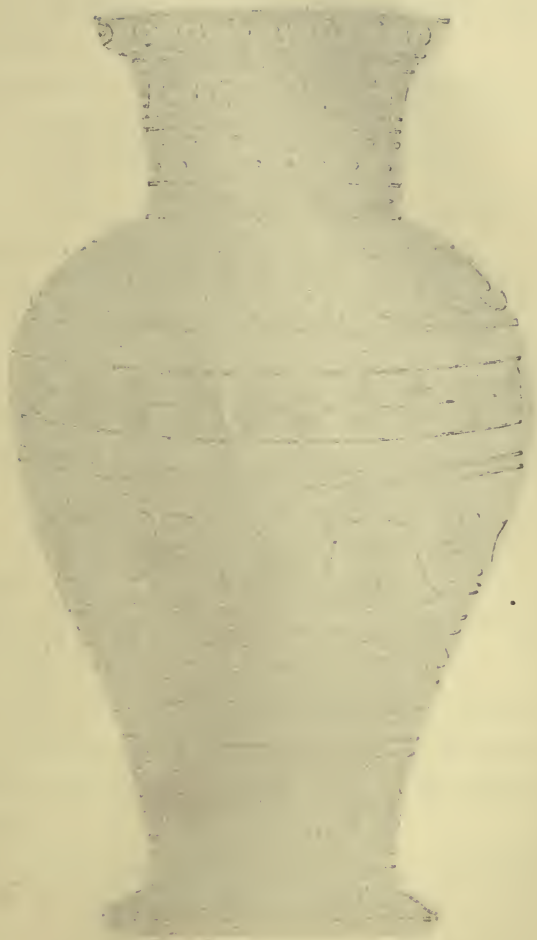
† See chapter on drawing.

have given, as well as numerous others which will suggest themselves to an inventive mind, can be done with the aid of the platform and a rule by those who have no knowledge of drawing. After drawing the designs with a pencil, they must be painted, instructions for which will be given further on.

Those who wish to make a study of drawing will find that practice in the lessons which we have presented will give them the muscular control of the hand and accuracy of eye, without which no one can become an accomplished draughtsman. Practice in these examples may be done on paper in free hand; that is, without the aid of the platform and rule. Such practice may be carried on indefinitely. Every hour or half-hour spent in this way for improvement will be of great benefit to the pupil, and it will not be a very long time before he will be able to take up the curved line with no other instruction than what he has gained from practice in straight lines.

When the curved line is added, the whole range of decorative art is open to the pupil; but our advice is, to keep to the simple curves as long as possible.

The quadrant, the semi-circle, the circle, will, in conjunction with the dot and straight line, furnish many pleas-





Vase No. 14.

ing forms; afterward the more subtle curves, as found in the wave scroll, the line of beauty, and the anthemion, may be attempted.

On the figure of vase No. 14 we have given examples of Greek ornamentation. For beauty of form and chasteness of decoration, the Greeks have never been excelled.

A row of small circles with centre dot (No. 1) gives a pleasing effect to the lip.

The Meander, Wall of Troy, or Greek fret (No. 2), with dots and diamond shapes, are suitable for the neck. A variation of the ovolo or egg and tongue ornament appears well upon the shoulder. (No. 3.)

A simple conventional wreath with heart-shaped, opposite leaves, and the anthemion or honeysuckle ornament and the fret alternately with a radiate flower, and bands adorn the body. (No. 4.)

A conventional form much used by the Greeks is placed at the lower portion of the body. (No. 5.)

On the foot (No. 6) a simple wreath with alternate leaves. These are given as examples merely of the forms most used by the Greeks in the best period of their decorative art.

One common fault with beginners, we find, is the ten-

dency to put on *too much ornament*, producing a loaded, crowded, disagreeable impression upon the mind.

Few, simple, and chaste, are the ornaments that have been universally used.

The law of "the survival of the fittest" only has left us but a score or two of forms from the nations of antiquity; yet, few as they are, the combinations of which they are capable are many, and, with the variety produced by change of color, ample to meet all our wants in this department of art.

In addition to the lessons previously given, we give two pages of illustrations of classic Greek forms.

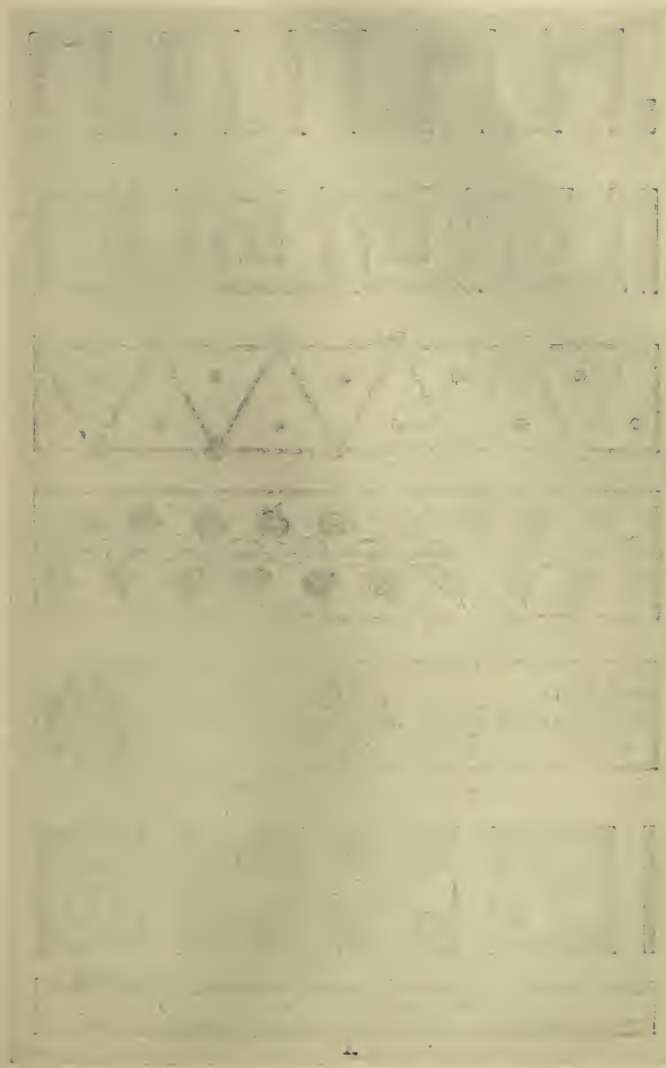
On page A will be found two simple examples of the Meander, or Greek fret. One example of the zigzag and dot combined.

A vine with heart-shaped, alternate leaves, with the stem curved into the sigmoid form or line of beauty.

Next, the plan of a radiate flower, with lines and dots filling the intermediate spaces.

Lastly, the square and triangle, concentric squares, etc.

On page B: One and two, a modification of the square and triangle, where the effect is produced by the varying thickness of the lines.







Three, concentric square connected by straight lines.

Four, the anthemion or honeysuckle ornament, in outline, with dots.

Five, a simple form of the same with broad bands. This figure suggests the French lily.

On the figure of vase number 13 we give the illustration of a vase from the collection of Sir Henry Englefield, and upon a separate page will be found the same design enlarged. The subject represents a female figure holding a casket. From it she is drawing a long fillet or riband, which she is showing to two young men. They appear to be closely examining it with great interest and attention. One of them holds a lance, and has on his feet rich sandals; the other has a stick in his hand. They are both naked with the exception of their mantles, which cross the back and are folded over the left arm.

It may, perhaps, be supposed that the female in this painting might be intended to represent an allegorical figure of Glory or Virtue, who is inspiring these young men with a noble emulation, by showing them a fillet, the reward of those who distinguish themselves by their valor in battle, or by their strength and skill in the exercises of the stadium; it has, by some, been thought to represent Ariadne giving

Thesens the thread by which he was enabled to extricate himself from the labyrinth. The figures are elegant and graceful: it was found at Nola,* and was purchased at the sale of Sir John Coghill.

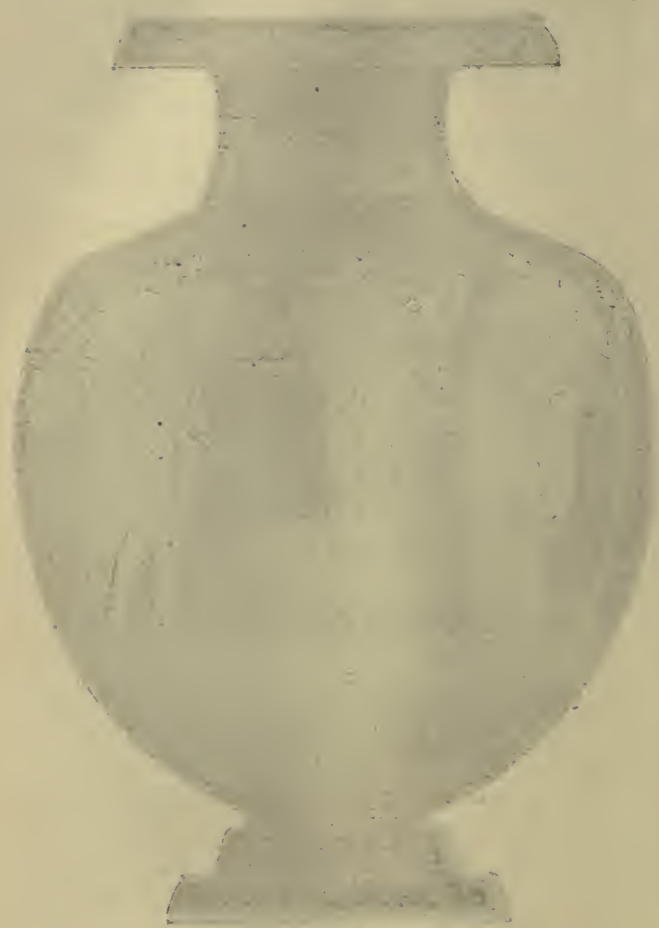
This style of decoration, which is pure Greek, is an advance from the lessons previously given, and will show what may be done. Those who acquire skill in the use of tracing and impression papers can easily transfer such designs upon the vase, and, for this purpose, we have recently published a series of twenty Flaxman's outlines,† so much used by many of the most famous potters. Chambers says of him, "Flaxman (John), the greatest of English sculptors, was born at York, England, July 6, 1755. At the age of fifteen he became a student in the Royal Academy, but never worked in the studio of any master. In 1782, he married a lady of superior gifts and graces, who soon began to exercise a beneficial influence upon his studies. Accompanied

*"An Episcopal city of South Italy, in the province of Caserta, sixteen miles east northeast of Naples; it is built on the site of one of the oldest cities of Campania. The ancient Nola was founded by the Ausonians, and fell into the hands of the Romans in the Samnite war, 313 B.C. Numerous beautiful vases, supposed to have been manufactured here by potters from Corinth, have been found in the vicinity."

† The price of this series of twenty designs in a folio is one dollar, and will be sent to any address on receipt of price by S. W. Tilton & Co., Boston.



No. 13.





Enlarged View of Illustrations on Vase No. 13.

by her he went, in 1787, to Italy, where, by degrees, he attracted the attention of all lovers of art. . . . The study of vase paintings, and the Pompeian mural pictures, then just revived, led him to abandon the sickly mannerism of his predecessors for the severe simplicity of the Antique."

If the reader wishes to carry the study of Greek decoration further, we would suggest for his consideration the following named books. First. "Greek Ornament,"* which contains twelve plates, printed in the original colors, and showing all the forms of Greek decoration. This style of decoration is applicable not only to pottery but to all forms of decorative art.

Second. Bulfinch's "Age of Fable, or Beauties of Mythology."* In this volume will be found all that is authentic of those stories or fables which have been handed down to us from remote ages, and which now, as well as in all past ages, furnish subjects for painters, sculptors, poets, and story-tellers. It also contains over one hundred illustrations, copied from ancient vases, paintings, and statuary. Besides having the stories before him, the reader will see that these illustrations, in reproducing the masterpieces of

* "Greek Ornament," price, \$1.00. "Age of Fable," price, \$2.50. Either of the above will be sent by mail to any address on receipt of price, by S. W. Tilton & Co., Boston.

ancient art, give the best idea which he can have of the conceptions which Greek and Roman had of the sacred beings in their mythology.

Our young readers will also find it a source of entertainment; those more advanced, a youthful companion in their reading; those who travel and visit museums and galleries of art, an interpreter of paintings and sculptures; and those who mingle in cultivated society, a key to allusions which are occasionally made.

A careful study of, and practice in, the lessons here given will greatly aid the beginner in becoming a skilful decorator. We would recommend the pupil to practise continually in all of the figures we have presented, and in the manner suggested, until he is sure of them at his fingers' end, whenever and wherever they may be desired. When he feels that he has acquired sufficient knowledge to begin decoration in earnest, a few hints on

THE SELECTION OF POTTERY

may be found useful. Terra-cotta ware for decoration may generally be found at the artist supply stores, and almost all shapes of vases, every variety of plaque, umbrella-stand, tile, etc., is made in this material. The Albert

ware * is specially good for decorative purposes; the shapes are very artistic, and the material fine and smooth. It is also quite ornamental, even without decoration. We should recommend for trial or first attempts plaques and cylinders, as they offer a more regular and even surface to work upon. Vases and subjects with delicate handles are to be avoided, as the danger of breakage is very great. Many — indeed, most — persons seem to have an irresistible impulse to seize such by the handles for examination. The articles are too delicately made to withstand such usage, and the general result is, that either the handles break off in the attempt to lift them, or while undergoing an examination, in which latter case the vase will fall to the floor, only to be utterly destroyed. This is quite discouraging to the artist, who has spent hours and perhaps days in the work of decoration.

PREPARATION OF POTTERY.

THE porous nature of terra-cotta or earthenware renders it quite difficult to decorate with fluid colors, in the condi-

* Price lists of shapes, sizes, etc., will be sent by mail, on application, to any address, on receipt of stamp, by S. W. Tilton & Co., Boston.

tion in which it will be received from the potter. By the application of a sizing this difficulty may be overcome, and if the article to be decorated is a vase or any vessel intended for holding water, the inside will also require preparation.

The reader may very easily test this by taking any earthenware vessel which has not been glazed, and, filling it with water; it will instantly begin to absorb the water, and after the pores are all filled the water will be forced out on the surface in small beads. This would in a short time destroy any decoration which might be made on the outside. Earthenware frequently may be found with the inside glazed. This will answer very well for cooking utensils, but for decorative purposes it will not be safe, as the glazing is liable to crack or be punctured, in which case it would be perfectly useless as a protection against water, because the slightest crack or break in the glazing will entirely destroy its protective power.

For inside protection apply a coat of painter's or linseed oil to the *inside* of the vase. If the mouth of the vase is too small to admit the hand and brush, turn in the oil, and rinse it around till every portion of the inside has been gone over, when what is left of the oil may be turned out.

If the outside decoration is to be done with water-colors, great care must be used not to allow any oil to touch the outside of the vase. In the course of a half-hour after applying the oil repeat the operation with painter's *varnish*, and allow it to dry. This will insure protection from a moderate use of water.

For the outside preparation it will make a difference whether the decoration is to be in water or oil-colors. If in water-colors, the same sizing which has been recommended for wood, etc., can be used. Apply it with a brush very carefully, and be sure to cover the entire outside surface of the object.

For decorating with oil-colors an oil or shellac sizing can be used, or both. To make shellac sizing dissolve bleached shellac in alcohol, — break the shellac into small pieces and put into a wide-mouthed, stoppered bottle; add alcohol till the shellac be entirely covered; if not all dissolved within twenty-four hours add half as much more alcohol, and shake the bottle until all is dissolved, when it will be ready for use. For oil sizing use pure boiled linseed oil. Either of the above may be applied with a bristle brush in precisely the same manner as though one was painting. If the shellac sizing be used alone the color of the vase will not

be materially changed; it may be a trifle darker. The oil sizing will make it very much darker. Many prefer the color produced by the use of oil to the original terra-cotta color. The only advantage in using both shellac and oil is that it may give a little better surface to work upon, and greater protection in case the vase is to be used for holding water.

Without any outside preparation it might be difficult to fix the colors, as the porous nature of the material causes it to absorb the fluid with which they are mixed, so rapidly as sometimes to leave the colors as a dry powder on the surface which may easily be rubbed or dusted off. There is, however, a very great difference in terra-cotta ware. While some is as porous as an ordinary flower-pot there may be found pieces so hard and firm as not to require any outside preparation. But this is so rarely found that it will always be safe to apply the sizing. .

DECORATION.

POTTERY may be decorated with water or oil-colors; this will require the use of brushes instead of the lead pencil. A brush when filled with color is to be used precisely as a pencil, the difference being that a pencil has

a firm, unyielding point, while the brush will be soft and flexible, and requiring a lighter touch. We would suggest that the pupil should accustom himself to the difference in their use by a little practice with brush and paint on some old flower-pots before beginning to decorate in earnest on vases or plaques. Proceed in this way: first sketch on the design with a lead pencil, after the manner previously described. This will give the outlines which are to be filled in with color. If the decoration is to be done in water-colors, fill in the entire design with Chinese white first. This is because water-colors are, nearly all of them, transparent, and to use them directly on the red ware would produce no effect; but if a foundation be laid on of white, first, the effect will be the same as though the painting were done on white paper. The idea intended to be conveyed by the above is that after filling in the outline with white paint, the pupil may proceed precisely as though he were painting on white paper. Of course it will be understood that the pencil marks will be covered by the paint. After the painting has been completed give the entire surface of the vase a coat of shellac. The object of this is to preserve the decoration, as otherwise the first drop of water on the vase might entirely ruin

the design. Tilton's Decorative Art Color Boxes contain all the colors necessary for this work except Chinese white, which can be had separately.

For general pottery decoration oil-colors are recommended, as they will be found to prove more permanent and will give better satisfaction. Those who have practised painting in water-colors from the instructions given on page 93 will find *pottery decoration with oil-colors* an excellent stepping-stone to a more extended knowledge of oil-painting. The principal points of difference between water and oil-colors are as follows; while nearly all of the former are transparent, nearly all of the latter are opaque, viz., in pure water-color practice a wash of yellow allowed to dry, then covered by a wash of blue, will appear green. The individuality of each color will be destroyed, and the effect will be the same as though the two colors had been mixed. In oils, the colors being opaque, one color will cover another, viz., a coat of white over a black ground will show white; that is, not being transparent, it hides whatever it covers, so that only the color last put on will show.

In water-colors one learns to work from light to dark while in oils it is the reverse, viz., from dark to light.

Another important difference is in the manner of working the colors.

In water-color painting any shade from the full strength of the color to the slightest tint can be obtained by adding water.

In oils a lighter shade of color is produced by adding white.

In colors mixed with water there is no substance to offer any material resistance to the movement of the brush, and the work is done by light touches of a soft and flexible brush.

Colors mixed with oil, having more substance, require a firmer brush and a heavier touch. We have said that painting with oil-colors on pottery might be made an excellent stepping-stone from water-colors to a more extended knowledge of oils, and it is for this reason: the colors to be employed are the regular oil-colors in tubes which are made for artists;* the method of mixing them is somewhat different from what is usual in ordinary oil-painting, inasmuch as instead of applying them clear or with oil, they are to be diluted with spirits of

* Sets of oil-colors complete may be had of the publishers of this book as low as \$2, and from that upwards. See chapter on Materials.

turpentine. This so reduces their consistency as to make the working of them very similar to water-colors.

To mix oil-colors with turpentine, squeeze a small quantity from the tube to a paint saucer, then add turpentine drop by drop until its consistency is reduced about one-half, when it will be ready for use. After using the colors cleanse the paint saucers and brushes thoroughly with turpentine, else the paint when dry will be difficult to remove from the saucer, and will ruin the brushes for further use. When two or more colors are mixed to produce a new tint, be sure and mix a sufficient quantity to cover the object intended, as it will be difficult to produce the same shade a second time.

Oil-colors reduced in this way for pottery work easily, dry quickly, are permanent, and present, when finished, that dead color usually found on specimens of antique pottery. If the decorator prefers a glossy or enamelled appearance instead of the dead color, he may have it by giving the subject a coat of shellac or outside varnish over the decoration. A careful following of the instructions so far given, including designs and method of mixing colors, will enable the decorator to produce good imitations of the simple and effective style of the ancients. A

good lesson on the flower-pot for preliminary practice with oil-colors will be to divide it into sections by drawing, with the aid of the platform, parallel lines at stated intervals around it; paint every other solid, and alternate with figures selected from the studies given.

Other styles of decoration are employed in which the colors may be mixed with oil or used clear just as they are squeezed from the tubes—one, that of painting a spray or branch of flowers across the article; another of almost covering it with the design, either heavy and decorative, or delicate and fanciful, such as flowers and fine grasses; or of covering entirely the background, that is the pottery article, with a black or shaded background of some color, say pale red at the top, deepening to very dark at the bottom. When dry, paint the design, say a spray of white cherry blossoms, across it. Or paint the background boldly in a rough blending of harmonious colors by dabbing in the paints, one after another, and, while wet, blending them with a soft brush. When dry, paint the design on it boldly and roughly. A heavy coat of shellac or varnish over it all gives it the effect of the much-sought ceramic, “Limoges.”



PAINTING ON ALBERTINE POTTERY.*

ANOTHER very beautiful kind of pottery which deserves a chapter by itself, is now made with flowers and designs modelled in high relief upon it. It is made for decoration, and is painted generally in imitation of a beautiful *faience* called *barbotine-ware*.

The pottery is very fine and smooth. The flowers and designs are very beautiful. An exquisitely shaped vase now stands before us, about which there is modelled a branch of roses, some drooping away from the vase so as to be almost detached, others lying close against it. The leaves and buds twine upward and encircle the neck.

The ware must be seen itself to be appreciated.

* The Albertine Ware is made at Cambridge, Mass., by A. H. Hews & Co.

The method of decorating it is as follows:—

The materials required are similar to those used in ordinary pottery and oil-painting, and are as follows:—

Oil colors in tubes, a palette, boiled linseed oil, bristle and camels'-hair brushes—a couple of each, one quite large, another medium size.* To those who can paint at all, even in the simplest way, this style of decoration offers no difficulties. The mechanical part of putting on the paint needs no knowledge; and those who have studied the chapters on painting in water-colors or in oils, and have used for practise the design cards or books recommended in them, will find they know quite enough about mixing colors to paint this pottery.

Squeeze your colors upon your palette.

Pour some oil into a little cup
to dip your brushes in while painting.

Let us choose, for instance, No. 218 in our illustration.



No. 218.

* Either of the oil-color boxes supplied by the publishers of this book will contain all of the colors required for this work.

Stand the piece of pottery before you; take your bristle brushes and proceed to paint the vase upon which the design or modelled relief is attached. The body of the vase should be painted with sweeps or strokes of the brush, using plenty of paint.

You will have to add oil to your paint frequently, or it will become so dry that it will not spread well upon the pottery. Do this by pouring a little oil from your cup upon your palette, or by dipping your brush into it as you would use water in water-color painting.

You may paint the body of the vase either one smooth, even color, such as light blue, or to imitate barbotine; or you may paint it of several colors or shades, dipping your brush into one color and then another, and blending them as you lay them on with your brush by running one color into another. These colors should generally be of the same order, or at least harmonious; thus begin at the upper part of your vase with light blue and work down the vase, taking a little more blue on your brush as you work, then a little brown, and then a little black, so that at the base your vase shades down to almost black. All shades of soft grays, greens, browns, yellows, etc., blend harmoniously, and the most exquisite effects are obtained entirely by chance, by

dipping your brush into all sorts of colors on your palette, at random, and painting them on, and then blending them by working them into one another with the brush. It is best to make your brush-marks run in one general direction, diagonally round the vase for instance, or up and down on a flattened vase, across or around on a plaque, etc., as you think best.

Use a good deal of oil, so that your paint may be put on rather thinly. In this way you can lay your paint smoother; for if it is thick it will form a lumpy and rough surface. When you have finished your background you may next paint the design which is modelled upon your vase. This design is one of roses, and your background may be painted in blue tints like the one which we have already described.

The roses should be painted to imitate nature, — tea-color, pink, and white. If you can procure a natural flower as a guide, so much the better. If you cannot get one, you may take some picture as a guide, or you may paint as suits your own fancy.

Let us paint the roses in this case two or three of them pale pink, and one of them tea-rose color.

Mix your pink (crimson lake) with a good deal of flake white, so that it may be very pale. Paint your rose-petals

all over inside and outside with this color. The petals should be deeper in color in the centre or little hollow of the petal, and lighter at the edge. The centre or heart of the rose should be a deeper pink than the outer leaves. The tea-rose should be painted with white, a *very little* chrome yellow, and a mere trace of vermilion, so slight that it merely gives a warmer tone to the yellow without making it red at all. The central petals of the rose and the hollows of the petals should be darker than the edges. The stems should be painted very light yellow green (white chrome and a very little permanent blue), also the calixes. The small leaves should be painted the same color. The large leaves should be darker green (permanent blue and chrome yellow), their tips a little lighter (add chrome). A little yellow ochre mixed with the green gives a brownish-yellow look to some of the leaves, and makes them very natural. The colors will dry in and become dull as soon as they are dry, but this need not trouble you, as they will all look bright again when varnished. When your work is quite dry you may varnish it with copal varnish, and your vase will be finished.*

* These directions are based on the colors in the lowest priced color-box. Cadmium is much better than chrome, and may be had separately.

We give in our illustrations but a few of the numberless designs which are made in this pottery. The ware is very fragile, and therefore you must be careful while working upon it. Keep it out of the dust while the paint or varnish is wet. If the ware should become dirty from accumulated dust, after it has been standing for some time, it may be washed in cold water very carefully, by allowing the water to run over it from a faucet, or by pouring it over the vase. Should you wish to use it for holding water, you may prepare the inside, as directed for the ordinary pottery vases in the preceding chapter.

DIRECTIONS FOR PAINTING ON ALBERTINE POTTERY.

Vase, No. 200. *Background*, or *vase*, dull red (Indian red and a little chrome). Beginning at upper left-hand corner, paint toward lower right-hand corner, adding first a little clear Indian red, then a little Vandyke brown, so that at last the color becomes very dark on the lower corner. *Flower*, pale yellow, (flake white and a little chrome); deeper in the centre, that is, paint the petals a little deeper color at their base, where they join the calyx (add more chrome to previous colors). *Leaves*, pale yellow-greens (chrome, a little permanent blue, and a little white); add a little burnt sienna to the green for the tips of some of the leaves. Should you wish to make a faded leaf, paint it with raw sienna. The *Stems* may be painted (burnt sienna, a little white, and a little chrome).



No. 200.

Basket with Roses, No. 207. *Groundwork or basket*, dull yellowish olive green (chrome, flake white, a little permanent blue, a *very little* burnt sienna). These colors should be used in rather a streaky way, that is, beginning at the upper left-hand point of the basket, with



No. 207.

chrome yellow, with just a little flake white in it, work toward the other end of the basket, adding just a little permanent blue to the first colors, then a little burnt sienna, until the right point of the basket is painted clear sienna. Do not mix your colors in

your palette, but take a dab of each on your brush, and blend them on the pottery by letting them streak into each other. In this way you get very charming, rich effects. Paint both sides of the basket almost alike. *Roses* — White at the base of the petals, add a very little chrome and permanent blue, just enough to give a slightly greenish tinge to the white petals where they join the calyx. *Stems and Calyxes* — Light gray green flake white, raw umber, and very little chrome, and a little permanent blue). *Leaves* — Dark green (permanent blue, Vandyke brown, and a little chrome). Some of the smaller leaves a little yellower, some few of the larger leaves tipped with burnt sienna. Handle of basket reddish brown

(Vandyke and burnt sienna), the inside of the basket may be painted, if desired, a pale shade of gray green (chrome, flake white, permanent blue and a very little burnt sienna).



No. 210.

Pitcher with Roses, No. 210. *Back-ground or pitcher*. — Chrome yellow at top, on the neck add a very little burnt sienna to the chrome on the body of vase, add more burnt sienna at the base, shade down to almost clear burnt sienna. *Roses* (white). *Leaves*, dark bluish green (permanent blue, a little chrome, and a little Vandyke brown). *Stems* (chrome, permanent blue, a very little vermilion, and white). *Frame*, background, pale olive green (chrome, white, a little permanent blue, and a

very little yellow ochre), keep the background pale and gray. *Roses*, petals, pale pink (flake white, crimson lake, and a very little chrome,

just enough to take away from the purplish shade of the pink). *Centres or stamens*, yellow (chrome). *Leaves*, bright yellowish light green (flake white, chrome, and a very little permanent blue). Paint the tips of some of the leaves with a little burnt sienna and yellow ochre.

Plaque, No. 228. *Groundwork or background.* — Pale blue. Begin at upper left-hand side of plaque, taking flake white and a *very little* permanent blue, paint with short-curved sweeps of the brush, following the curve of the plaque (see circular lines in illustration), when the upper left-hand corner of the plaque is filled in diagonally, add a little more permanent blue to your color, then a *very little* yellow ochre and blue, and then a very little Vandyke brown and blue. This last color will bring you out to the edge in the lower right-hand corner. Your background will therefore be a shade from very pale blue, through dull greenish-blue, to very dark, dull blue, the shading running diagonally across the plaque. *Roses* — *Bud* pink (carmine, flake white, and a *very little* chrome, just enough to take away from the purplish shade of the pink). Inner petals of bud deeper pink (more carmine), upper rose, pink (like bud, only more flake white, that is lighter), tips of petals a little darker (more carmine), second rose, pale yellow (flake-white, little chrome and a *very little* vermillion, just enough to make the yellow warmer), centre petals a little yellower (more chrome), third rose, like the second. *Stems* — Pale yellow green (chrome, flake white, and very little permanent blue), upper spray of leaves, light yellow green. Chrome, a little flake white, and permanent blue. *Second spray of leaves*, darker green (chrome, permanent blue, and a very little yellow ochre), third *spray* (yellow ochre, a very little permanent blue, and the tips of the leaves painted with burnt sienna, this spray is to look a little turned as the older leaves on a bush look.



No. 228.

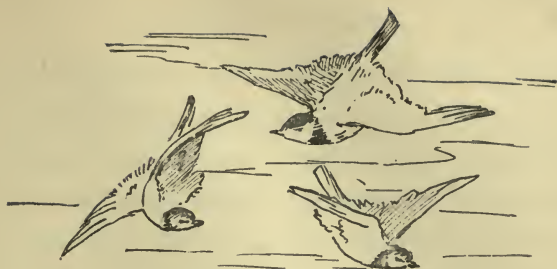
Flat Vase, No. 231. *Background or vase.*—Begin at upper left-hand corner with gray green (flake white, a little permanent blue, chrome, and



No. 231.

a *very little* vermillion), paint diagonally across the vase, that is so that the gradations of shading shall run from the upper right-hand corner down to the lower left corner. Next, add to the previous colors, yellow ochre, and a very little burnt sienna, then omitting the white, use yellow ochre and burnt sienna, until it brings you down to the lower right-hand corner, which should be clear burnt sienna. Both sides of the vase may be alike. Carry the colors on the base of the vase around into the sides in their order. Carrying the colors around the sides of the vase will exactly reverse the order in which they come out on the other side, so to have the color continuous you may reverse the order of colors on the other side, beginning with the upper right-hand corner,

light gray green, etc.. *Flowers* (chrome yellow).—Leaves pale yellow green (chrome, flake white, and a little permanent blue). One or two of the leaves may have a little yellow ochre and white towards their tips. This had better be when they come against the dark part of the background.



PAINTING ON CHINA.

PAINTING on china is very simple and easy to those who have already learned either to paint in water or oil-colors: The colors resemble oil-colors very much, being put up in tubes, squeezed upon a palette and thinned with turpentine or oil, and applied in very much the same manner to the surface. Too much mystery has been allowed to grow around the art of painting on china, and those who would otherwise have attempted it as naturally and readily as water or oil painting have been deterred by the mysterious hints given by the initiated about "changes that take place in the mineral colors in the firing," the difficulties of "grounding," etc. These difficulties are really very simple ones, and can readily be overcome by a little use of the memory and by attention and patience. Let the reader remember that he may paint upon china just as he would upon any hard, smooth surface, and work with confidence and boldness, fixing in his mind the idea

that his picture will, after it has been through the fire, be exactly what it was before, with the exception of a few colors which he can easily carry in his mind, or make a note of for convenience. The materials needed are as follows: —

Some article made of china, not transparent porcelain, but opaque, cream-white china, with a glaze. Care should be used in selecting the article, for it must be free from spots or imperfections in the glaze and of good quality.

China colors, which come put up in tubes, ready for use.

A slab or square of ground glass, to use as a palette to mix the colors upon.

A palette knife made of bone.

Brushes. Camels' hair brushes, such as are used in water-color painting. For all ordinary work these will suffice. One or two small camels' hair brushes with square ends ; one medium-sized camels' hair brush, with a good point; one small but very pointed outlining brush; one large camels' hair brush, over an inch broad and flat; a camels' hair brush, called a blender, is sometimes used, but with a little practice it is not necessary.

Turpentine. Pour some from a bottle into a cup or shallow dish, to use for dipping your brushes into or to dilute your colors with.

Oil of lavender to add to your colors when you wish to make a flat tint.

Some fine linen rags (old handkerchiefs are good), and some ordinary rags for wiping your brush, wiping out imperfect work or cleansing your palette.

Alcohol to wash out your brushes or to wash color off your hands.

A hand rest, that is a flat, thin strip of wood, about two inches wide, with a little block under either end, to raise it about an inch and a half from the table or the surface of the article upon which you are painting. This, of course, is only to use when you are painting upon a flat surface or a concave one. If the edges of the article on which you are painting are raised, as in a plaque, you may merely lay a ruler across from edge to edge. The warmth of your hand would make it stick to the paint if you rested it directly upon the painted surface.



A needle to remove any hairs or particles of dust that stick to the article when it is being painted.

A little cotton wadding to make a dabber. To make a dab-

ber, take a little square of *very fine* linen, about four or five inches square, lay it upon the table, put a small quantity of cotton wool in the centre, about as big as two walnuts, and gather the square of linen up about it and tie it loosely round about with a string, near the cotton, so as to make a thing resembling a shuttle-cock. It must be very soft and yielding, so do not tie it too close to the cotton, crowding that into a hard lump. This dabber is to pat down smooth even backgrounds with, as you will see.

*A pan of carmine.** This must be of moist water-color paint, and is for outlining the first sketch on the china.

We will now proceed to give the reader a lesson in working with these materials.

A plaque or hollow plate is the easiest form to decorate, curved surfaces offering more difficulties, as they have to be turned about while working to enable one to paint on all sides of them. A large solid flower is simplest, as from the fact that it is not indented or cut up much, there will be less difficulty in wiping out the design after the background is done, as you will see further on. The indentations or irregularities which one has to deal with in a flower like a daisy for instance, make it a longer and more annoying process.

* One of Tilton's ten-cent pans or tubes will answer.

Take your outlining brush and your pan of carmine, a tumbler of water, and proceed to outline your design, using no other medium to wet your brush in than the water. This enables you to work over it with your china color mixed with turpentine, for the water-color will not come off. Your outline should be clear, decided, and sharp. This outline being in water-color paint will *entirely disappear* when the plate is fired or baked, so that you must regard it merely as a guide while you are working and not as having *any part in your design*, so that if you wish your design to be outlined you must be careful to go over every portion of your water-color outline with your china color. This you will have to be particularly careful about if the outline in china color is similar in color to your carmine, as often you might neglect to go over some little portion, and after it was fired that part would be without an outline. The carmine (water-color) outline may be rubbed out at will with a wet rag. If your outline is not correct the first time, you can rub it out and draw it again.

To return to the beginning of our lesson, outline your design in carmine and then proceed thus:

Mix your colors before you begin to paint, very thoroughly, by rubbing them down with turpentine and your pa-

lette knife upon your glass slab. For your larger surfaces, such as the petals or broad leaves of a flower, take your flat-tipped brushes and lay the color in smooth, flat strokes, each successive stroke touching the edge of the last stroke, but not overlapping. It must be always remembered that you must never paint over the same spot twice while it is at all wet and even after it is quite dry it can only be done by one who has a light and experienced touch. Do not have your color too thick, but still do not be afraid to lay your colors boldly, as you can wipe them off as often as you like with a clean rag wet with turpentine. Practice is the best and only teacher that can guide you here. After a little trying you will discover for yourself how to use your brush most easily and with best effect. Do not be afraid of failure. You may not succeed at first, it is not an easy thing, but you can always wash your faults away with turpentine, and every mistake you make will teach you something. For long-pointed leaves or surfaces your ordinary pointed brushes you will find most serviceable. Remember that in painting on china if you have practised the instructions we have previously given on water-color painting, it will be of very great assistance to you in learning to do this work. After you have finished painting your design, which may be quite fin-

ished in every detail or only partly finished, you may have it fired, leaving most of the details to be put on after this first firing. The merit of this last way of having it fired first before all the details are put in is, that after it is fired, you can work over the first colors as much as you like, without their coming off or being in the least affected by it. Thus you may have it fired as often as you like, each time adding a little. Some celebrated artists have their plates fired sixteen or seventeen times. For ordinary work two or three firings will be enough, and for simple work, when you have no colored background, one firing is enough. This can be done by a professional decorator, of whom there are a number in every city, or at home, by procuring some one of the fire-clay boxes to be used in ordinary stoves or kilns, complete in themselves, which have been invented to meet this urgent need.

We will now proceed with the background. A smooth background is the easiest to make, so we will begin with that. By a smooth background, we mean one which shows no brush marks or strokes, but presents a smooth-colored surface, or tint. This tint may be even or shaded from light to dark or clouded. Proceed thus — squeeze sufficient color upon your ground glass slab, to serve for the whole

background. You will not be able to judge how much you need at first, but you had better err on the side of having too much, than too little, for if you stop to mix more while your background is half covered it will dry and leave a line between the old and new portions. The principle here is the same as we have taught in water-color painting. Pour upon your paint enough turpentine to make it about the consistency of cream, when it is rubbed down with your bone palette knife. This you must do by rubbing it thoroughly on the slab with the flat of your knife. All colors must be rubbed down in this way with turpentine. When you have two or three colors to mix, they must be thoroughly rubbed together until you have the required shade, and *never* trust to mixing them with your brush, or they will be streaky. If you have two or three shades for your background or any part of your design, they must all be mixed before you begin. That is, if you begin at the top with yellow, shade into orange in the middle, and into dark red at the bottom. If you have merely one color, such as light red at the top, deeper red in the middle, and dark red at the bottom, you need merely take the color thin at first and add more (take more on the brush) as you proceed. Having mixed your background color thoroughly with your

palette knife and turpentine, add a few drops of oil of lavender. This is done to keep the color wet longer, as it will not evaporate so quickly as the turpentine, and there is less danger of your leaving a line between your fresh brush strokes and your old ones, if any delay should give them time to dry somewhat. It also makes the paint flow more freely—a very few drops of oil will go a long way—too much oil will make the color blister in the fire, so you must use only as much as is absolutely necessary, say three or four drops for the background of a plate eight inches across. The oil need only be used where there are large surfaces to cover, such as backgrounds. Take your background brush, and, filling it pretty full of color, proceed to lay on the color over the whole plate, design and all, in broad smooth strokes or sweeps of the brush, either curved or straight, and rather long and bold. Each sweep must carry the paint close up, or overlapping the edge of the previous sweep, so that no space is exposed between them. The principle is the same as the flat wash in water-color painting.

You cannot pass your brush twice over one place, as the second stroke will take up the first paint and make a light or broken spot in the color (unless your plate with the first color upon it has been fired). You cannot, therefore, patch

your work anywhere, so that each stroke must be considered. You cannot wipe out with turpentine any one spot in a background, for when it is filled in again it will look quite differently from the rest, and will show distinctly where it has been patched. The only thing is to wipe out the whole background with a rag wet with turpentine, and then begin over again.

The surface must be covered as evenly as possible, that is, there must be no great variety in the shades of the different strokes. One must not be darker than another unless you wish a shaded background, when you may proceed in the same way, only add color as you wish to deepen it. When your plate is all covered with the background color, take your dabber and proceed to pat it all over. Pat it until it is all even. If one spot is darker than another, pat it until it becomes lighter. Wipe your dabber occasionally with a rag, if it becomes too full of paint. If you have patted any particular spot too long, until it looks lighter than the rest, put a very little paint on your dabber and pat it on to the light spot. Now if your background is not satisfactory you may wet a rag with spirits of turpentine and wash it all off, without affecting the design in the least, as turpentine will not affect water-color. If your background is satisfactory,

and when it is quite dry, you may now proceed to wipe out your design. Take a fine linen strip, (the hem of a handkerchief), roll it up into a little cylinder, and with the end slightly wet with turpentine, wipe off all the background paint from your design, that is, all the surface included within the outlines of your design. This is tedious, as it requires time and patience to wipe *perfectly clean* every part of the design; this is why it is easier to have a large solid design, than one which is much cut up. Remember, wherever you leave any color, it will remain after firing and can never be removed. You cannot be too careful about wiping your design carefully and so that it shall be quite free from the background color. Be also careful not to drop any turpentine upon your background, as wherever you drop any you will leave a white spot. Another way of drawing your design is this, although it is not suggested that it should be practised by any but those who can draw with precision and exactness. Take your plate and paint on and finish your background first, then while your background is still moist take some pointed instrument, say a knitting-needle, and draw your design upon the background with it. It will leave a white line. This will serve you for an outline, and you may then wipe out your design as in the first method.

Of course, if you make a false line, it cannot be corrected, as you cannot cover it over, for it will make a patch in your background. You have now learned to make a smooth background. It is a very simple matter and only requires "practice to make perfect." Such a background may be varied from the white of the plate for the lightest tint if required, beginning at the upper edge, then deepening down through pale, then to the deepest blue at the lower edge blending each tint carefully into the next with your dabber, by patting all over the plate carefully. You may blend different colors in the same way. To make your background clouded, lay the paint more heavily in some places than in others, and when using your dabber preserve the same effect by keeping some places lighter than others.

OTHER BACKGROUNDS.

Another way of making a background is to proceed as in the beginning; draw your design, mix your color or colors, take your background brush and paint it all over in strong sweeps or strokes. This time, remember that this is to be the last process, and you must paint just as you wish it to be, for it will not be blended with a dabber,

Make it as even as possible. Make your strokes not too long this time, but vigorous, remembering not to touch one place twice. In his method you may have the first painting of your background fired in, (that is, baked) remembering to wipe out your design first, and then paint all over again perhaps sweeping the strokes from the opposite direction and crossing the original strokes at *acute* angles. You can get very good effects in this way.

This style of allowing the strokes of the brush to show in the background gives great vigor and richness to the work, and is considered more artistic. It is impossible to describe the richness of the effects attainable in this style. But the reader has only to try it for himself to see. We recommend most strongly to the reader to paint his background boldly and strongly, this being the chief merit of this style, and to wash the background off repeatedly with a rag wet with turpentine, until it is satisfactory, for the loss of the paint is as nothing in the balance to the experience gained by so doing. Shaded backgrounds of one or several colors can be made in this style as well as in the former style. When your background is satisfactory, wipe out your design as before.

Now, if you intend to outline your design, which should

be done if it is conventional, and gives finish and richness to very simple, strong designs, you may outline it now. Designs of flowers, birds, figures, landscapes, etc., when it is intended to finish them either in a sketchy style, or in minute imitation of nature, need not be outlined. But the reader must remember, however, in either case, if he is painting white objects, where the china is left for the white tint, to outline or go over the lines in some pale neutral tint, say gray, of all portions of his design, when it is necessary to preserve the outline, or in color, — the centres of flowers where stems cross, etc., in fact, any portion the outline of which is not formed by the ending of the background color and the beginning of the white china, or in white objects, or where a mass of color comes together without being outlined by the background. If the design is to be outlined, a suitable color is chosen, — red brown (*brun rouge*) is a good one, and looks well with almost every color, — and this outline of the design is carefully gone over with an outline brush. This outline should be delicate, firm, precise, and clear. The chief beauty of the design rests with the outlining, so that it should be done conscientiously at least, if not skilfully. The outlining of nearly all Japanese work is wonderfully good, and if you are fortunate enough to

own a well-designed Japanese fan or similarly decorated object, you cannot do better than to devote a few moments of study to the extreme nicety, and at the same time the extreme strength and correctness of the work. When your design is wholly outlined thus, or in portions, as for other styles of work, the plate is ready for a second firing.

Of course there is always some risk in the process of firing. The plate may be broken, or the colors may, some of them, become altered by the heat. For the first danger we can offer no help, except suggesting to our reader to try and discover from some one the very best and most careful person to fire his plates attainable. For the second danger, we offer the following list of paints which are affected by the heat, and which are to be used at discretion, subject to the following facts:—

Yellow is a very powerful color, and will always preponderate after firing over any other color mixed with it. Thus it has to be shaded with almost black or *very dark* gray.

Carmine, unless applied very thinly, will fire into a brick red.

Any little particles of dust which settle on the article

while painting can be removed with the point of a needle.

The publishers of this book have designs prepared especially for china decoration, in a great many styles in transferring patterns (see chapter on Transferring Designs) which may be transferred immediately on the china, and require no knowledge of drawing.

We give the following list of ten colors which will be found to answer all purposes. Every artist has what is called his favorite palette, that is, each artist becomes accustomed to a certain list of colors, which he always uses, either from preference or habit. The reader, probably, after he has painted for some time, will also become more partial to certain colors and mixtures of colors than to some others, when he may choose for himself. The best plan is to take a white china tile and paint a little square of each of his colors upon it with the pure color, then a little square of certain mixtures which he is in the habit of using, such as greens, grays, etc. Then print the name of the color or mixture under each one, and have this tile fired. He can then use this for reference, and can tell how each color will look after it has been fired.

LIST OF TEN COLORS.

Ivory Black,	Pompadour Pink,
Brown No. 3,	Celestial Blue,
Yellow for Mixing,	Grass Green No. 5.
Silver Yellow,	Deep Chrome Green,
Capucine Red,	Light Violet of Gold.

COLORS WHICH CHANGE IN FIRING.

Pink must be put on thin if you wish a light tint, as it will fire a dull, dingy red. When dry, shade with the same.

Violet of Gold must be used in the same way. These change more than any other colors in firing.

Capucine Red must be put on quite heavily to obtain a good color.

Blue will deepen in color by firing,

COLOR MIXING.

Pink and Violet of Gold should not be mixed with anything, but after drying may be shaded with Black.

In using Green a little Pink can be mixed; also Red, Brown, and Black.

Mixing Yellow is used to lighten Greens.

Silver Yellow must be kept by itself, as it will eat out other colors. Flowers painted with it may be quite heavily shaded with Brown and Green.

Grass Green is also a strong color, needs mixing Yellow, and is best shaded with Black or Brown. Use Black sparingly, as it comes out very black.

TINTING COLORS.

Silver Yellow,	Celestial Blue,
Pompadour Pink,	Chrome Green,
Violet of Gold.	

These all make good tints.

Chrome Green mixed with a little Black and Brown, is used to shade Grass Green, and looks well when fired.

We here present our readers copies of forty designs, with a description of the coloring of each, which were used by Josiah Wedgwood in the decoration of porcelain.

They are such as he found by experience to be the most satisfactory.

Many of them were taken without alteration from Greek vases of the best period.

Others are modifications of Egyptian forms.



PAINTING ON CHINA.

Some were designed in Italy and Germany, and sent to him to be used in the decoration of special orders.*

No. 1. The vine in light blue; ground, white; outer border, background, and curved lines, in brown.

No. 2. The broad band, upon which is painted the forget-me-not, is a light buff; the flowers, natural color of deep blue; leaves, stem, and narrow bands, brown; the palm-branch, light green.

No. 3. A favorite pattern, varied but little from the Greek; the outer portion being the astragal, or bead-and-button moulding, the inner, the egg-and-dart, or tongue moulding, — all black except the egg, which is light green.

No. 4. The quatrefoil of leaves is to be light red, all else black.

No. 5. Broad bands, brown; stems and leaves, green, shaded brown; flowers, blue.

No. 6. Outer band, light green; inner, pale yellow; wave-lines, brown; wheat, light yellow; the white dots of the engraving color, brown.

No. 7. The ground in which the dots appear is pink. What is black in the engraving should be brown in the object.

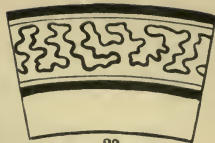
* For other designs and instruction, see Greek Ornament as applied to Pottery Decoration, which may be had from the publishers of this book.



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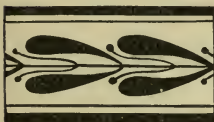
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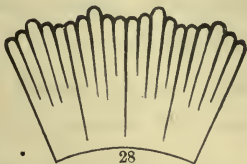
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No. 8. A very light, grayish-blue for all that is black in the engraving; the half-tint is a graded shade of brown, for relief.

No. 9. Same as No. 5.

No. 10. All brown; a very pleasing pattern.

No. 11. Colored like No. 8.

No. 12. Outer band, purple; ground for dots, green; curved lines and drops, pink; leaves, green.

No. 13. Same as engraving, except a deep-red ground for the meander or fret.

No. 14. The ovoid or shield for the anthemeon, dark-red; all else black.

No. 15. Outer band, brown; larger leaves, light green; flowers and spray, pink.

No. 16. All brown; favorite design.

No. 17. Outer band, brown; ground, lemon-yellow; leaves and spray, same as outer band; flowers, pink.

No. 18. Outer band and design, brown on lemon-yellow ground.

No. 19. Outer band and design, light-blue on dark-red ground.

No. 20. Bands and stems, brown; leaves, green, shaded brown.

No. 21. All brown; very pleasing.

No. 22. Variations of Egyptian lotus-bud. Ground, black; stems, and shaded portion of buds, brown.

No. 23. Vermicelli pattern. Ground, light stippled brown; bands, dark brown; design, black.

No. 24. Same in color as No. 21.

No. 25. Ground, black; central line, and half tint, shading brown.

No. 26. Same as No. 9.

Nos. 27 and 29. Greek. Colors same as in Nos. 13 and 14.

No. 28. What is black in pattern, make a golden brown.

Nos. 30 and 32. Greek. Black figures upon a russet ground.

No. 31. Light portion of leaves, yellow; shaded portion and bands, brown.

No. 33. Bands, design, and dots, brown, upon lemon ground.

No. 34. The black, same as in pattern; the half-tint, green, on a buff ground.

No. 35. Outer band brown; leaves, green on green ground, but outlined and slightly shaded in brown; ribbons, pink.

No. 37. Brown design on deep-yellow ground.

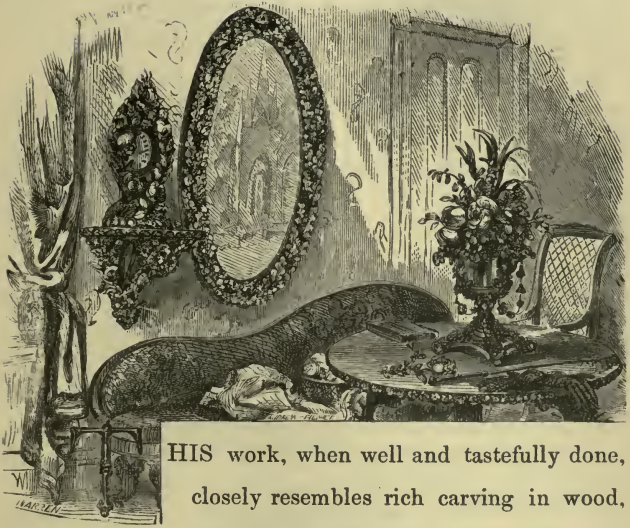
Nos. 36, 38, 39, 40. All Greek patterns. Black upon red ground.

The above-described combinations of color are as given by Wedgwood; they can be varied to suit the taste of the decorator.

NOTE. — The following important information in regard to painting in backgrounds has been sent to us by a valued correspondent since the above chapter was prepared. Its practice will save the decorator much time and trouble :—

After drawing the design, and before painting in the background, cover the whole design, that is, fill in all portions of it with a preparation made of glycerine and chalk powder. Make the preparation sufficiently fluid to enable one to paint it on with a brush, but not liquid enough to run. When dry, paint the background over the whole surface, then send it to be fired, and when it has been returned all that portion covered with chalk and glycerine will peel off and the design will be left bare.

LEATHER WORK.



HIS work, when well and tastefully done, closely resembles rich carving in wood, and can be used for a great variety of useful and ornamental purposes.

We have adopted the following method with success : —

Select a soft sheep skin rather thick ; cut from it flowers and leaves to suit your fancy. It is well to have pasteboard patterns free from blemishes and neatly cut, and with these it will be easy to cut from the leather. Due attention should be given to different

sizes and kinds. When you have a sufficient number cut from the leather, wet them in cold water, and squeeze them dry, and pull them into shape, and form the leaves and flowers to suit your taste; while wet, put them into the oven to dry. Make a solution of vinegar and Venetian red, and dip them into it. When perfectly dry, dip them in thin black varnish; if the varnish be too thick, dilute it with spirits of turpentine. When dry, they will have the color of rosewood.

Take gum shellac, and the night before you wish to use it, pour on sufficient alcohol to dissolve it. Dip the flowers and leaves into this solution, taking care not to have it too thick. If not stiff enough, dip them a second time. Put them on a board to dry in the *sun*, as the drying by a *fire* will have a tendency to make them sticky.

Paint your frame, or whatever is to be covered, with Venetian red and vinegar, and when dry, rub it smooth. Varnish with thin black varnish, and when dry, nail on the leaves and flowers with small tacks, and paint with a solution of shellac dissolved in alcohol; finally, varnish with the best copal varnish.

Again, for general purposes, basil leather is good. Select that of an even texture and light color.

The skiver leather is used for grapes, small leaves, and delicate work. (The artist will find that the sheep skin, easily to be had, will answer all purposes, by using discretion in selecting the thick, soft, or thin portions, as the work may require.) Place a piece of the basil leather in water for a moment; press it in a linen cloth until the surface dries. While damp, cut out your leaf with scissors or a leather-cutting knife. Pasteboard patterns can easily be made from natural leaves. By laying these patterns upon the leather, the leaves can be readily cut.

Vein with a pointed instrument, by marking on the smooth side

of the leather; then bend and mold your leaves as you wish them to appear when the work is completed. Dry them quickly to harden them.

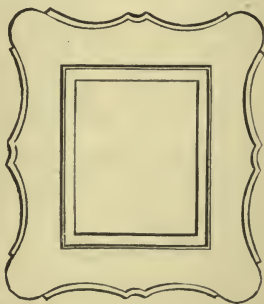
When thoroughly dry, brush all over with prepared stiffening, which is sold in convenient sized bottles. After this process, brush the leaves all over with black varnish; two thin coats are sufficient.

For stems, take strips of basil leather, wet and roll with the hand upon the table, or over a wire.

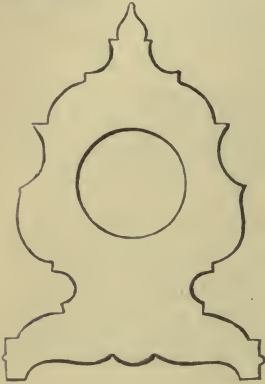
For tendrils, wind the leather, while wet, around a small round stick or tool, fastening the ends; dry quickly by the fire; remove from the stick, and apply a coat of stiffening; the finish is the same as for leaves.

Grapes are very handsome in this work. They are made by tying bits of cotton or wadding, peas, marbles, etc., into the leather with strong thread, then putting a piece of wire through the part which has been tied up for the stalk. Stain and make into clusters, taking care to conceal the part tied. All fruits and flowers are stained, etc., precisely in the same manner as leaves.

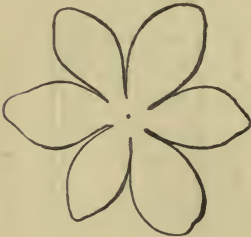
THE FRAME. — Have a frame made of well-seasoned wood, with the outer edge thinner than the inner, though this is a matter of taste. Size it all over. Let it dry for an hour or so. Then apply a coating of oak varnish stain; when dry, it will be ready for use. Commence by attaching the stem with small tacks. Suppose you have a vine; cover the wood with the foliage as naturally as possible. Fasten with strong glue, where necessary. A narrow gold beading gives a finished appearance to a frame.



It is impossible in our limited space to particularize the various articles for which leather work is adapted ; but every individual of fertile imagination and ingenuity will readily perceive the uses to which this art can be applied. We give a pretty design for a watchstand.



In making flowers, *cut in one piece* wherever you can ; the white lily, for instance, where the petals may be squeezed up and



glued to keep them in place. It is always preferable to have a natural flower to look at. A little ingenuity will enable the

learner to cut the leather to advantage, and the fewer the pieces used, the simpler the work will be.

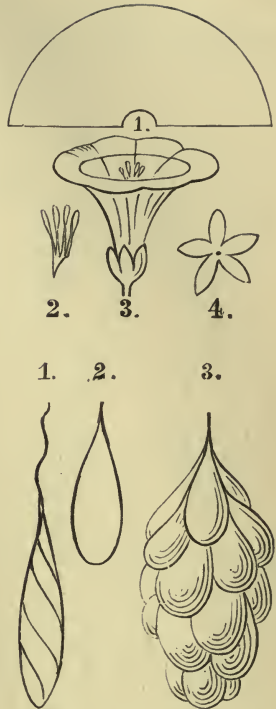
The bud of the white lily is made by folding the whole corolla close together.

A *convolvulus* may be made by folding and stretching the leather, while wet, over the tool used to make the wax convolvulus. It is very pretty, and not difficult to make.

Roses, camellias, etc., can all be made handsomely by a little care and ingenuity.

Do not forget our favorite the *hop vine*. To make it, wind a piece of leather around the end of a wire; fasten well. Mold the requisite number of petals in a convex form, and glue separately around this center.

The Fuschia. — The calyx forms the external part of this flower, and is made with one piece of leather cut as in the figure. The petals within this are four, and are cut out, the four in one piece, in the form of the dotted line. They must be molded into shape, and glued to the stamina inside the calyx, so as to alternate with its petals. This flower has nine stamina, and they are cut in one piece of leather. To put the fuschia together: Cut the nine stamina, and attach to them the wire, to form the stalk; then

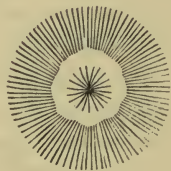
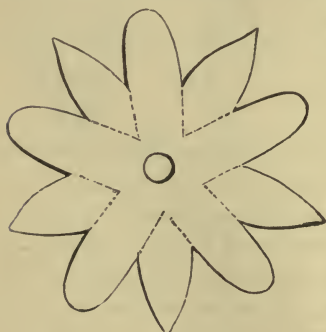


roll the four petals firmly over the stamina ; they must be molded and glued round the stamina and stalk, then take the calyx and roll round the whole ; the leaves must be expanded and molded as in the diagram, taking care that the stamina are left out, as in the natural flower, and that the inner petals alternate with the leaves of the calyx ; to make the buds, roll up the calyx, and turn the ends in, not inserting any stamina.



The *Passion Flower* is composed, in leather, of five pieces. Then cut out the corolla of five petals with the rounded ends ; cut also a circular piece for the nectary, which must be cut all round with the knife to form the radii, the center having many small cuts radiating from the central point ; when turned upward, in putting it in its place, it forms the

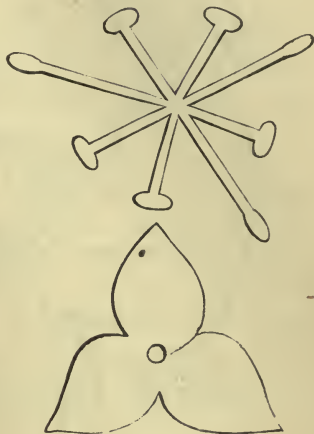
fringe-like appearance around the pistil seen in the flowers.



The passion flower has five stamina, with ladle-shaped ends, or anthers, and three stigmas a little elevated above, and turning over

the stamina; the anthers and stigmas are made of one piece of leather. The involucrum is formed also of one piece, and the three leaves are laid one over the other, as in the annexed flower.

To put together the various parts above described and form the passion flower, begin by doubling a piece of wire over the angles of the stamina, twisting it underneath; roll a piece of skiver leather round the wire to form the style of the pistil and the stem of the whole flower; then turn up the three stigmas and roll a small piece of leather round them close to the stamina, and turn them over; this being done,



place the nectary on the stem, taking care that the cut portion in the center be arranged upward around the pistil. The petals are next placed on the stem, followed by the calyx; the leaves of the calyx must alternate with the petals; liquid glue must be inserted between each portion of the flower to give it firmness.

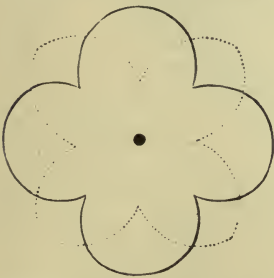
The involucrum, which is a sort of calyx, is put on the stem last, a little way below the true calyx; we may just add, that all the leaves, petals, etc., with the exception of the involucrum, must have the smooth side of the leather uppermost; the petals and calyx must be hollowed out with the modelling tool for that purpose, or if that is not at hand, use the handle of the veining tool, and laying the petals and also the calyx on a smooth surface,



rub them with the ivory end of the veining tool till they become hollow and smooth, as in the natural flower.

The above is the way, as plainly as we can possibly describe it, to make a passion flower. We have repeatedly made the flower exactly upon the above plan, and it has always been much admired.

Camellias vary in the form of leaves, and the petals vary in number. To make a camellia, cut out two pieces, as in the annexed



diagram, containing four petals in each; then cut out one or two larger pieces, with six petals in each, and one or more still larger, with seven or eight petals; then, having a natural camellia at hand, mould them all into form, fasten all the pieces of leather together, the smallest at the top, and the

largest at the bottom, so that the petals alternate, with liquid glue, and put a piece of wire through the whole for the stalk; cover it with skiver leather.

To make the *Jessamine*, copy the corolla from the annexed design, by cutting a star-like piece of basil, into which insert the wire for the stalk as closely as possible. As the stamina are not visible in this flower, it is needless to make them. The tube upon which the corolla rests can be made by rolling a piece of leather round the wire thickest at the flower, and then add another piece of leather about an inch below the corolla, which must have five fine-pointed leaves for the calyx.

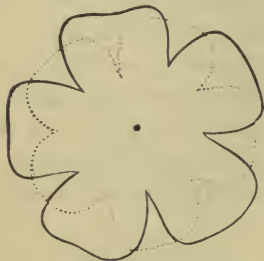


The *Daisy* is formed by making two pieces of leather like the pattern, one larger than the other, and putting

the wire, for stalk, through both of them. The little golden center of the daisy can be well imitated by placing a round piece of leather, rather thick, in the center, shaved off at the edges, and marked with the veining tool full of dots.



A *Wild Rose* is made by cutting out two pieces of leather, exactly as in the engraving, putting the wire through two holes made in the center of the pieces with a fine brad-awl, and pass a piece of wire through the holes, leaving both ends of the wire at the back to be twisted for the stalk. To form the stamina, cut fine



strips of leather as long again as the stamina are required to be, and insert them under the eye of the wire which forms the stalk; then cut the stamina, and pinch them up into form. The top piece, containing five petals, must be molded and curved upward, in-losing the stamina; the bottom

piece also, containing five petals, must be molded downward, curving and bending them into form.

To make a larger rose, cut out a smaller piece than is shown in the engraving, of the same form, also the two in the engraving, and a larger piece of the same form, making four pieces, containing twenty petals; then proceed as before mentioned, and a fuller rose is produced; thus the character of the flower and the number of petals can be regulated with comparative ease.

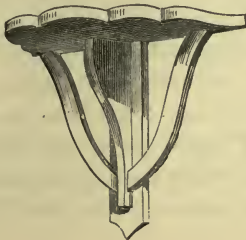
The rose leaves can be molded at the back by pressing them into the grape mold with one of the pressing tools.

Oak and Ivy Bracket.—The bracket annexed is of an un-

sually pretty pattern, and we give two diagrams. The vine and the convolvulus pattern are much used, with very beautiful effect. We intended this design to exhibit old oak. It should be stained very dark, the oak stems being very thick, while the stems of ivy can be formed of tendrils. To make the oak stem, get very



thick wire, and have it cut to the desired lengths; then cover the wires with leather, and bend them to resemble gnarled oak; attach, as naturally as possible, oak leaves and acorns at the back of the wires, and on the wood work, as shown in the skeleton bracket in a former part of this work; then attach the ivy tendrils, leaves, and berries around the oak stems, and the bracket is completed.



It improves the appearance of any piece of ornamental work, to give the whole when completed a slight coat of varnish.

Card Racks can be made in a variety of ways. The design here exhibited is novel, and at the same time very useful. The



back is made either with wood or calf-skin leather; and the leaves forming the rack are also made of the same material. Calf-skin dries very hard, being treated exactly the same as the basil leather in the manner of working.

The Round Open-work Frame. — The beautiful design on the opposite page is made with a round frame of any width desired, having two rebates, one inside and one outside the frame — the inside rebate being to admit the picture, and the outside one to allow of the nailing firmly to the frame the open-work, which is to be made in the following manner: Take a flat board, — an ironing board will do, — lay the frame upon it, and with a black lead pencil or a piece of chalk, mark the size all round, making allowance for the rebate; then having ready the stems, work them in and out, so as to form the open-work as in the drawing; when finished, nail it to the frame, and work stems and tendrils of the vine, hop, passion flower, or any other beautiful creeping plant, attaching the fruit or flowers in an artistic manner, and the result will be one of the most elegant frames ever beheld.

The open or trellis-work of this frame should have stout wire inclosed in the basil leather, and in order that it may not appear formal, wind pieces of leather round the naked wire at irregular intervals, to resemble knots, etc.; then cover the whole with basil

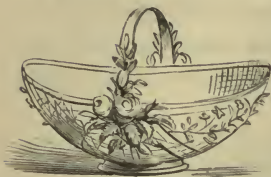
leather. The stem and tendrils, which are to wind in and out, and are a portion of the plant, are not to have wire in them.

Fire Screens are generally filled with Berlin wool, or some other fancy needlework. Those who would prefer to have an entire



piece of leather work, can paint landscapes or flowers upon white leather, using the same medium as is used in body color painting, mixed with finely-powdered colors.

A little ingenuity will enable any one to make very pretty and useful *Baskets*. One like the following, ornamented with rose sprays outside, can be lined inside with velvet, and little pockets being made in the velvet lining, they become a very useful article. The outside is stained in imitation of oak.



The *Running Border* here given can be adapted to ornamenting cornices, poles, frames, etc. It is very easy of imitation, and will well repay the artist.

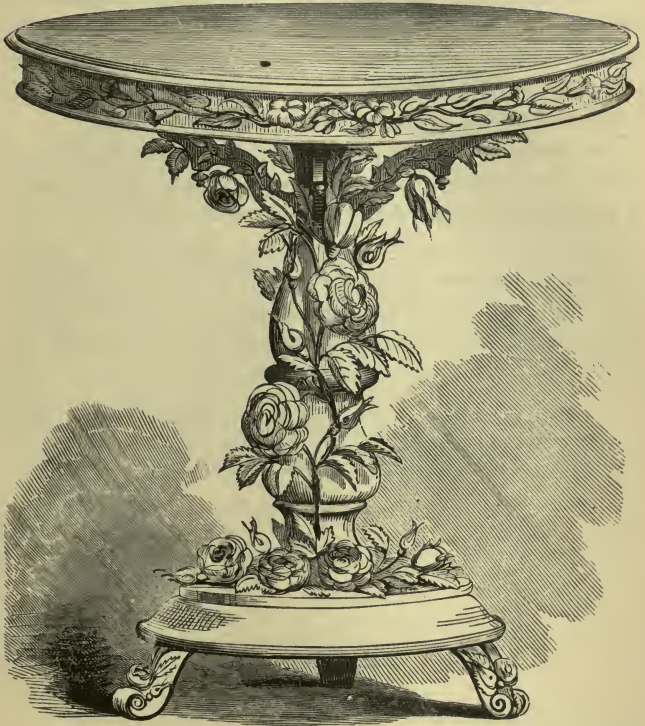
We close this article with a beautiful design for a *TABLE*. It is made in four pieces, so that one part can be done at a time, and when completed, can be removed until the whole is completed, when it can be put firmly together, and forms a solid example of the use and beauty of the ornamental leather work.



In making *Acorns*, procure some natural acorn cups, — choose such cups only as are perfectly sound, — then pierce two holes through the bottom of the cup, pass a piece of fine wire through the holes, leaving the two ends long enough to be twisted into a stalk. If the stalk is to be exposed, it must be covered and made fast with liquid glue. The most correctly formed acorn tops are those turned in wood, which can be firmly placed in the cup by the aid of the liquid glue. This completes the fully-formed acorn. A slight variation of this method is suitable for cherries and grapes.

The Size for Stiffening. — Simmer four ounces of strips of parchment in eight ounces of water till it is reduced one half; skim off any impurities that may arise to the surface, then strain through a

fine sieve, or cloth, into a basin ; leave it till cold, when it will be firm and clear. When required for use, cut off as much as you want, and warm it. Use while warm.



A thin glue size of a light color will answer when the above materials are not handy.

In this, as in all other kinds of fancy work, every thing depends upon the neatness of the work. You must not only arrange taste-

fully, but you must secure every leaf, tendril, and flower firmly ; and, above all things, do not crowd together such a mass of work as to displease the eye and offend good taste.

A very pretty effect is produced by gilding and bronzing the leather. Go over the surface of your leaf or petal with a camel's hair pencil dipped in gold size, and when so dry that it will stick to the finger lay on your gold leaf or gold bronze as in directions for bronze painting, on another page.

In painting leather work, use finely-powdered colors, mixing them to the consistency of cream, by using the white of an egg with two ounces of distilled vinegar. Keep this in a bottle, and shake it well whenever you wish to mix colors with it. Colors can be also mixed with warm parchment size, or with a weak solution of gum arabic. In all of these methods apply a coat of quick drying pale varnish. Oil colors are not suited to this kind of material.

WAX WORK.



THE tools requisite in this delightful branch of ornamental work, are as follows, and as the learner advances in knowledge and experience, he will easily originate other forms and models from which to make particular designs : —

A “dipper,” or “plunger,” (for sheeting the wax,) made of *lignumvitæ*, or some very close-grained, hard wood, as smooth as glass, from four to six inches in

diameter across the face, (which should be *slightly* convex.)

Molding sticks of this form, and of two or more sizes.



One of this, for convolvulus.



One of this, for lily of the valley, and centers of flowers.



One of this, for the lilac and cups of jonquil.



If you wish to make other varieties of bell flowers, get the sticks turned by some skillful workman, from natural flowers; they should be very hard, and as smooth as possible.

The brushes used in painting the smooth surface of flowers are the round, stiff, bristle brushes, called *scrubs*, or *theorem brushes*. For fine lines, spots, etc., take fine camel's hair pencils.

Wire of three different sizes, annealed.

TO PREPARE WAX FOR FLOWERS. — Take the very best quality of white wax, and melt it slowly in an earthen vessel or porcelain porringer; when melted, stir into it one table-spoonful of fir balsam to every cup of melted wax.

Have at hand a basin of warm soap suds, fine towels or rags, and your dipper.

When the wax is melted, wet your dipper in the suds, rub soap all over it, rinse it in the basin, shake off the water, dip with a quick motion into the hot wax, so as barely to skim the surface, bending the dipper over, so as to exclude the air; raise your dipper from the wax, and plunge it into the basin of suds. A sheet of thin, semi-transparent, flexible wax will be found therein of the right consistency for roses, azalias, and all flowers of similar texture. Continue dipping off sheets until you wish to change the quality of the wax; be careful that the wax be neither bubbling hot nor cool.

Japonicas, orange blossoms, and all thick, opaque petals require a different white. To make this, we put into the wax, when hot, a small bag of flake or German white; never more than one third of a tea-spoonful, and dip as before, only regulating the thickness of the wax by heat. When you have dipped off as many sheets as you require, pour the rest into a well-soaped cup to form a lump for pinks.

Next to the white, prepare yellow wax in the same way as the white, only using yellow-powdered chrome. After you have made the yellow, put together all the bits and edges of wax which you have pulled from the sheets, add green powdered paint, and dip off various shades of green, from very light to very dark. Other colors, as red and blue, may be prepared in the same way; but we prefer painting the white and yellow wax to obtain more brilliancy of tone.

The melted wax, as for japonicas, is used for bell-flowers. Soap the stick very thoroughly, wash off the particles of soap, plunge your stick into the hot wax, then into the suds. In taking the stick from the wax, let the wax drip from the end rather than the side. We think it best to plunge the stick quickly and raise it perpendicularly; in this way, if there be a little extra thickness, it will come in the right place.

The utmost care must be taken with the lily of the valley; be not discouraged if you dip two or three times before getting a perfect bell. The wax must be hot, without simmer or bubble.

Green leaves made by dipping the natural leaf into the hot green wax, then putting the two wax sides together, with a wire between, are more natural than when cut and veined; but they tax the patience, and require more time.

Another Method of preparing Wax. — Melt the wax in a vessel of hot water; the wax will rise to the top. Put in fir balsam, sweet oil, and spirits of turpentine, in the proportion of 1, 2, 3, — that is, one part turpentine, two oil, and three balsam, — six teaspoonfuls to a pint of wax in warm weather, and one third more in cold weather. Immerse a junk bottle into the wax; it will form around it. Cut down the wax on the bottle, and you will thus have a strip instead of a round sheet of wax.

We prefer the former to the latter method of preparing the wax, though we use both.

To make Patterns for Flowers. — Dissect natural flowers, and cut paper patterns from their petals, writing on them the number of each size and the number of sizes, likewise the color desired.

FLOWER MAKING. — Where a flower requires fine work or minute penciling, the sable brushes are to be used for

this purpose, and they will be found essentially necessary in the imitation of geraniums, carnations, heart's-ease, or flowers of similar character.

Before you commence cutting, take care to render your scissors loose in the rivet. Dip them constantly in the cup of water at your side, to prevent their adhesion to the wax; should they, in spite of this, become clogged, place them in your mouth for a few seconds, and the heat will clear the edges so that you can wipe them easily.

You will perceive that the wax has a dull side and a glossy one — a right and a wrong.

It is better to lay the paper pattern upon the dull side, so that, in cutting out, you secure a sharp and clear edge. Be cautious that you place the pattern in such a position as to cut with the grain of the wax. Be sure to cut the same number of petals as you found in the natural flower, or the harmony of proportion desirable in your flower will be lost.

Spread half a sheet of tissue paper over the table upon which you intend to work, so as to prevent the slightest dust or impurity of any kind from injuring your wax, to which every particle of dust will adhere.

As we have remarked in speaking of painting the

fruit, the stiff brushes are held perfectly upright, and the color applied rapidly.

Damask roses, fuschias, camellias, etc., may be painted with crimson powder mixed with water on the palette. (See list of colors.)

A bright scarlet for poppies, scarlet dahlies, etc., is obtained by painting the same crimson on yellow wax.

The same on a light lemon-colored wax gives another beautiful shade. Various shades of rose tints can be gained by carmine more or less deep. Sometimes we paint with dry powder. If the wax be slightly warm, the powder will adhere, and a soft, velvety surface be produced, such as can not be made by the use of the water color alone. In making a bouquet, you need the various colors and surfaces, if you will be true to nature. Be very careful to avoid painting that portion of each petal which is to be joined to the foundation of the flower, as any moisture or color prevents a secure adhesion.

To make a Pink Rose.—Lay the cut paper pattern on the wrong side of the wax, cut with the small, sharp scissors, frequently dipping them in warm water, or putting them in your mouth. Paint very lightly with carmine, leaving the lower part of the petal white. Lay a petal on the palm of your hand, right side down; press the head of the wooden pin, first on the right, then on

the left side, endeavoring not to press the middle. This will give a graceful curl to the petal, as you will observe by the natural one. Half-blown roses and buds need to be curled more than full-blown ones.

Your petals painted and arranged in order, proceed to make the stamens. This is done by binding a strip of yellow wax, one eighth of an inch in width, on a strip of white wax, nearly one inch in width, and cutting through the yellow half way down into the white, so as to make a fringe. The finer you cut it, the better; or you can cut the unbound white wax; then dip the cut ends into a solution of gum arabic, and afterward into powdered yellow; this will give a pollen.

The calyx is cut from a suitable shade of green, and from a pattern taken from the calyx of a natural rose.

For the leaves take two shades of green — one for the upper, the other for the under side of the leaf; put them together, and cut your green leaf through the double wax; insert a wire between the two parts of the leaf to form the fibre and pedicle of the same; then press the two sides firmly together, and serrate the edges with your sharp scissors.

The leaf has a neater finish if the wire be covered with wax before inserting. Take a very narrow strip of wax, lay it perpendicularly against the wire; then twist the wire round and round between the thumb and finger, until it is entirely covered with a smooth surface of green.

Observe how symmetrically Nature has arranged her rose leaves, and try to imitate — one large one for the top of the stalk, two a little smaller placed just below, and a third pair still farther down.

Fine wire doubled is better than coarse, stiff wire. Take of such a piece the desired length; turn the end over two or three times, to prevent the flower slipping off while you are putting it together.

Cover the end thus bent with green wax, pinching up a bit in the center for a pistil; wind around this the strip of fringed wax, and compare with the natural flower. Now set around the petals, commencing with the smallest size; press the lower part of each petal on the lump which is around the wire. Take the other sizes one after the other, pressing them in the same manner, and so on till all are used. Work down the lower parts of the petals with the small end of the molding stick.

Set the calyx around neatly, and cover the stalk. You will have a rose natural and beautiful in proportion to the neatness of your work and the accuracy with which you have imitated your pattern, a natural one.

Persons often smell of our roses, then, with a look of astonishment, exclaim, "Why, what kind of a rose is it!" Nature alone can give the perfume.

Camellia.—After modeling a rose, any person can make a japonica by having one to look at. In case our reader has none, we give these directions.

Cut six petals from each of the heart-shaped patterns from which you cut your rose, only a trifle longer. Make a ball of wax on the end of the wire, turned as before to prevent the flower slipping off, and bend over it eight or ten of the smallest petals; then place three rows of the succeeding sizes of petals turned inward around the ball in the center, and the other rows turn outward. The calyx is of light green, round at the top; the leaves are large, brilliant, dark-green color.

Colored japonicas vary only in color. Crimson painted on yellow gives a fine color, and carmine on white makes a beautiful japonica.

Convolvulus.—Convolvuli are dipped on a stick made for that purpose from the natural flower. Paint the veins with a fine

brush. Put a bit of wax on the end of a fine wire, and cut to imitate stamens; pierce the wire through the tube of the flower, twist with green wax, and finish off with tendrils and leaves. Tendrils are made by covering a small wire with wax, and twisting it around a molding stick, commencing at the point, and turning it round and round from the center of the stick to the point, to form a spiral cone. A few small green leaves make a pretty finish.

Lily of the Valley. — “Consider the lilies, how they grow; they toil not, they spin not, and yet I say unto you, that Solomon in all his glory was not arrayed like one of these.” Cut the edge of the little white bells into scallops, turn them back a little, put a bit of yellow wax on the end of a bent wire, dip it in gum arabic, then in yellow powder for pollen; draw the wire through the center of the flower, and twist for a stalk with very delicate light green. The leaves are too large and stiff to be pretty in wax.

Violets should be painted with a soft brush; they require much time and care.

Orange Blossoms must be made from thick wax; the stamens cut longer than for a rose. The beautiful white buds and various green leaves can hardly be equaled by any other flower made in wax. They are pretty wedding presents for the hair.

Dahlia. — Cut the petals from the natural flower; roll each petal with the head of the molding stick from the top to the bottom; draw a perpendicular line with the point of the stick through the center of the leaf, and curved lines on each side, like the longitudinal lines on a globe; turn the top of the three largest sizes back a little.

As this flower is very broad at the base, pass your wire doubled twice through a large button mold, twist it firmly underneath, and cover it with yellow or very pale green wax; roll up a small bit of yellow wax, and mold it to the center of the button; press closely

around this the lower end of a cut fringe of yellow wax dipped in gum arabic and powdered for pollen; around these stamens mold the twenty-five or thirty small petals. Care must be taken to keep them pressed very closely together, and as the surface of the button becomes filled, wind around its edges strips of yellow wax; continue to set the petals around in the order of their sizes, keeping a broad surface.

The calyces help to support the flower. Below the two rows of flat calyces, place five nipped at the ends and turned backward.

This flower is rather difficult to put together, but amply repays the labor by its naturalness and beauty.

Pinks. — The petals may be cut and pointed with sharp scissors, then painted with a soft brush, or with the dry powder, as heretofore directed, according to the color desired.

Another and Better Method. — Paint all over the lump of wax which you have run in the cup for that purpose; then scrape from it with a sharp penknife. If you hold the knife between the thumb and fore finger of the right hand, and begin to scrape at the center of the knife, leaving off at the point, you will get a beautifully variegated pointed petal, smooth on one side, and slightly quilled on the other. We draw a bit of quill feather over the knife for the two stamens, and arrange the petals around in order, beginning with the smallest. Finish off with a pointed calyx; imitate the natural one.

Hyacinths can be made single or double, of various shades and colors. Do not paint the lower part of the petals. Roll them from the top to the bottom, draw a line through the middle, press it on the under side to make a strong indenture, put the lower part under the thumb, and turn the top over the fore finger — easy to make.

We have now spoken of the various methods which we employ in making flowers, and will only add, that in our study to imitate natural flowers, we use whatever suits our purpose best ; for some stamens, as those of the dahlia, we dry the center of a natural dahlia, and use it instead of the cut stamen. Sometimes we dip sewing cotton into hot wax, drawing it through the fingers ; this is good where the filaments are long. Again, manilla grass is used, as it is stiff as well as delicate.

If we wish to represent a petal having one color on one side, and one on the other, as the white lily, which is green and white, we put a piece of thin white muslin between green and white wax, and cut the petal through the two ; this interlining gives a clear green on one side, and a clear white on the other ; the same may be done with other colors, as the buff and pink for honeysuckles.

White Passion Flowers.—To form the three purple anthers to be seen on the top of the pistil, roll white wax round fine wires of about three quarters of an inch in length, till the proper size and length are obtained, remembering to make them thicker as you approach the top, which in itself is nearly globular.

Color these anthers with the darkest shade of purple, and twist the ends of the three wires together.

In order to form the pistil, place, one over the other, a sufficient quantity of light green, light yellow, and white wax, the latter being intended for the outside; roll these together round second sized wire into the desired shape, the top being thicker than the base, which terminates in a globe of lemon-colored wax, representing the ovary or seed cup.

The three purple anthers are placed on the crown of the pistil, so that their tops are equidistant from each other, forming a triangle, the sides of which are about an inch in length.

Five ladle-shaped stamens are next formed from the same union of wax as used in the pistil, properly cut by the pattern, curled and united to the stem of the pistil, having been previously colored round the edges with yellow.

Cut a piece of white wax into a fine fringe about half an inch deep and two inches long; color the fringe with a rich deep purple, and roll it round the ovary, turning the purple portions over the globe, and touching the pistil.

Double a piece of white wax the same length as before, and snip the edge with the point of the scissors about the twentieth part of an inch; this short fringe, being colored purple upon its edge, is rolled close to the base of the preceding piece.

The rays are formed from a double piece of white wax, and cut in fine shreds to pattern; roll each between your finger and thumb, as for a stem, and when all are rolled, place them upright, and close to each other, upon a strip of white wax about two and a half inches long and half an inch deep, taking care that the rays are so placed that their points extend about three quarters of an inch above the strip.

We now proceed to color the points with blue, leaving the centers white, and tinting the base with purple.

This done, bend the points backward, and arrange the rays round the portions already attached to the seed cup.

Place one sheet of lemon-colored wax between two of white, and from this cut the petals. Color them on either side with light green; curl upon the uncolored side -- first with the head of the stick round the edges, and then once down the center.

The calyx is cut from light green wax, and curled upon the glossy side.

After placing the petals so as to form a double star, proceed to roll green wax round the stem formed of wire.

The passion flower is a native of Brazil, where it attains a luxuriance of growth unknown to our temperate regions. The legend connected with it has given it an interest almost sacred, even when viewed by other eyes than those of superstitious devotees.

It is said that certain Jews, bewailing in Jerusalem the death of Christ, saw for the first time this flower, by some said to have sprung wherever drops of his blood had fallen, and, with the scene of his wondrous passion and death still fresh in their memory, gave to this beautiful blossom a symbolic meaning, indicative of his sufferings and the manner of his death.

The anthers are supposed to represent the three nails used at the crucifixion.

The rays represent the glory of our Lord. The purple

fringe, sometimes found with red spots upon it, is a type of the crown of thorns.

The petals, ten in number, are the representatives of those apostles who were faithful to their heavenly Master.

The three sepals forming the calyx are emblematic of the Trinity.

This poetical conception has caused the passion flower to be held in esteem almost amounting to veneration in Catholic countries; and the blossom is found entwined in many cases with emblazoned inscriptions, and borders of old manuscripts of the sacred writings.

Who does not love the passion flower? And who, among God's children, does not recognize his glory in every flower that grows? The anemone, the buttercup, the daisy, the violet, all lead our thoughts to him, and we are forced to cry out, "How wondrous are thy works, O God!"

WAX FRUIT.—Some people use the poorer kinds of wax for fruit, thinking to economize; but our experience has taught us that the best is the cheapest, and therefore we get the best the market affords. We melt the wax in small earthen or stone pitchers, putting a white

muslin bag of paint, say one third of a tea-spoonful, into the hot wax. For lemons, yellow apples, peaches, etc., we use yellow or lemon powdered chrome ; for oranges, orange chrome ; for green apples, cucumbers, green pears, etc., green chrome, varying the shades according to what we desire to make.

The wax should never be heated to boiling, neither should it be made thick with the powdered paint. If a sufficiently dark color can not be obtained by the use of the little muslin bag, then add oil paint of the desired shade from the tubes. Our boxes of oil-colors contain all that are necessary.

For a rich plum, for example, we color the wax with drop red powdered, and add rich dark blue, or purple, from the tube.

Oil the inside of the mold by gently patting it with a bit of cotton batting dipped in lamp oil and tallow, as before mentioned. Place the mold so that you can see how to bring the locks together in an instant. Hold one half the mold firmly in your left hand ; with the right hand pour into it the melted wax from the pitcher ; shut the empty half over it as quickly as possible, and holding the mold with both your hands, press the

two sides together, turn round and round and shake in every direction, until you can no longer hear the motion of the wax; then set the mold aside to cool. While you are waiting for that piece of fruit to cool, mold others in the same way.

If one person is to work alone, and wait upon himself, we advise him to make fruit of but one color, say yellow, as in peaches, yellow apples, lemons, yellow pears, crab apples, until he has acquired some skill, and is able to move quickly and manage many things. Before pouring the heated wax into the mold, try it by placing a thin bit on the surface of the melted wax; if it melts immediately it is *too* hot, and will spoil the mold; if it floats on the surface, slowly melting at the edges, it is all right. To have the fruit look well, the wax must be neither too hot nor too cold.

In from ten to fifteen minutes the mold will feel cool to your hand, when you can open it and take out the fruit; scrape away, in a slanting direction, the seam where the two parts of the mold united; after which, rub it with a soft rag dipped in turpentine.

The fruit being nicely clean, smooth, and without cracks, proceed to paint it with a bristle brush, of which

you must have half a dozen, as you must always use the same brush for the same color.

Take, with a small palette knife or spatula, out of the bottle, a minute portion of the color required; if you have a peach, for instance, take carmine, dip the end of the brush stick into water, letting the end of the globule fall upon the palette near the powder, and mix well together, until the tint be of the consistency of cream, and perfectly smooth. We must caution against dipping the body of the brush, or bristles, into water. The brushes used are held upright, and the color applied rapidly.

If possible, have a natural peach, and try to imitate it in color.

For the down of the peach, put some dry flour on the palms of your hands, roll the peach between your hands until every part be covered with the flour; after which, the peach should be as little handled as possible.

To have a variety in your peaches, paint some a little green or brown; a brown spot now and then, has a good effect.

Oranges and lemons, eggs and plums, need no outside painting.

Red apples are painted over the yellow wax, and can be nicely finished up with the camel's hair pencil; for the apple calyx, insert a bit of carbonated paper, tobacco, or tea leaf; for the stem, take a natural one. Finish your apple by rubbing it with the hand till it shines; or, what is better, varnish it with fine copal varnish.

Tomatoes are handsome, and, provided you get a nice mold, they are easily made. Various small fruits, as barberries, strawberries, etc., are formed with the fingers, and stuck with beads where necessary. Blackberries are handsome, if made with care.

Grapes. — Many persons make purple grapes by putting a lump of wax on the end of a bent wire, and afterward in melted rosin. They look well at a distance, if nicely powdered with blue paint; but we prefer forming them of purple wax entirely, or dipping grape glasses into the purple, as we do into green wax for green grapes.

We obtain various glass globes of the sizes of grapes, glue fine wire into each of them for a stalk, and plunge into green wax, prepared expressly for grapes, as attention must be paid to their color.

Have the wax very hot, and dip the glass globe as

quickly as possible, holding uprightly to let the wax run under the grape. (Don't mind if the hot wax makes your fingers tingle; you want a beautiful bunch of grapes; "pay for a thing and have it;" we have dipped two hundred without stopping.) Bunch the grapes, the small ones at the end; wind the stalks, and finish up with tendrils and leaves.

Having good molds, it will be easy for you to make wax dolls, birds, sheep, etc.

Hold the mold in your left hand; pour the melted wax into the aperture. As soon as it forms around the edges, pour back into the vessel what remains, and set the mold aside to cool.

To color dolls, we stir a very little vermilion into the hot wax; or, what is better still, tie it up in a bit of muslin, and paint the cheeks with the stiff brush, in the same manner as rose leaves.

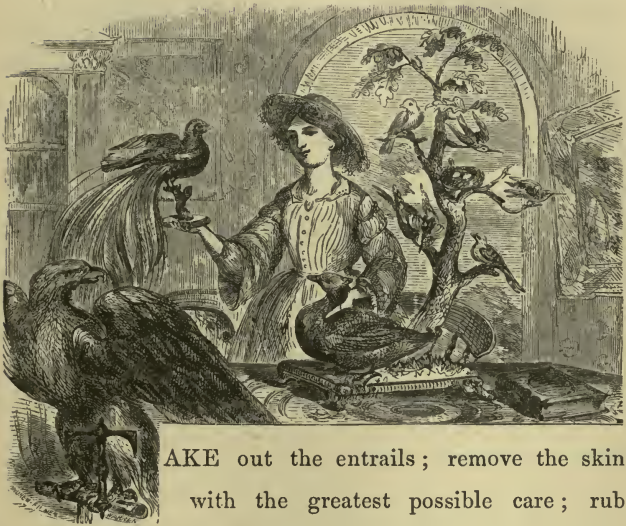
We put hair on their heads, and insert enameled eyes or beads, according to the size of the doll.

Before concluding our article on wax flowers, we would say that ladies need not be deterred from making them by the trouble of preparing the wax, since very nice sheet-wax, of all shades and colors, and of different

thicknesses, can be procured at any artist-material store; as also powdered paints and bottles of adhesive mixtures, to use with water-colors in the fine pencilings of such flowers as pansies, morning-glories, &c. These mixtures are superior to gum-arabic, inasmuch as they are less liable to crack than gum arabic.

The powdered paints, rubbed carefully on the surface of the wax with the finger, produce that soft and delicate texture so necessary to the perfection of wax flowers. And here it may be well to describe other methods of making green leaves, in which we have been very successful: one is, to soak green leaves, say rose-leaves, or those of a similar texture, in soap and water for a few hours; shake off the water, and plunge the leaf directly into hot wax of the desired shade of green; take out, and remove the coating of wax from both the upper and under side of the leaf; put the two together, with a wire between them, and you get a beautiful leaf. Another, less perfect, but easier method, is to make a mold of a natural leaf, either of plaster or by pressing together pieces of wax in a solid lump, and getting the impression of the veined side upon it; then cut the wax-leaf, and take the impression from it or the plaster mold.

TAXIDERMY.

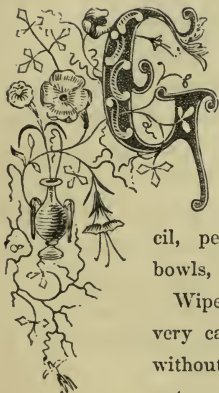


TAKE out the entrails; remove the skin with the greatest possible care; rub over the whole interior with arsenic, (a deadly poison;) put wires from the head to the legs to preserve the natural form, and stuff immediately with tow, wool, or the like. If allowed to dry after applying the arsenic, the skin becomes too stiff to handle.

Another, and, as we think, a better way for very small

birds, is, “after taking out the entrails, to open a passage to the brain, which must be scooped out through the mouth; introduce into the cavities of the skull and the whole body a mixture of salt, pepper, and alum, putting some through the gullet and whole length of the neck; then hang the bird in a cool, airy place — first by the feet, that the body may be impregnated by the salt, and afterward by a thread through the under mandible of the bill, till it appears to be sweet; then hang in the sun, or near a fire. After it is well dry, clear out what remains of the mixture, and fill up the cavity of the body with wool, oakum, or any soft substance.”

PLASTER WORK.



REAT care is necessary in regard to the consistency of the plaster, and the thorough greasing of the molds.

Provide yourself with the best ground French plaster, some good lamp or neat's foot oil, (if the former, add a very small bit of mutton tallow,) camel's hair pencil, penknife, rags, thick brown paper, small bowls, or a box of sand, and well water.

Wipe such fruit as you have selected for molds very carefully, and remove the calyx and stems without marring the skin. If you wish to mold nuts, or fruit having a rough surface, (except oranges and lemons,) it is best to grease them in such a manner that all the surface may be perfectly smeared, without being greasy.

Make hollows in your sand, or, as we think preferable, lay cloths as smoothly as possible in the bowls to receive the plaster. You will see the advantage of the rags over the sand, when you finish up the molds, particularly if you wish them to look very neatly on the outside.

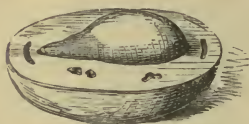
Having every thing at hand, (and *be sure* that you do have every thing ready, for the plaster will not wait your motion,) begin to mix your plaster; at first, take but little, say a half pint of water or less; into this filter your plaster until you get the consistency of batter for cakes; we usually mix with an iron spoon. Pour the plaster into the hollows in

the sand, or into the bowls in which you have spread the cloth; insert just one half of each piece of fruit thus:—



let it remain until the plaster is hard; then remove the fruit with the greatest care. If your plaster was properly mixed, you will have

the exact impression of the fruit on the inside, and on raising from the cloth, a pretty smooth outside surface. Now trim the edges, cutting the plaster horizontally to the level of the impression on the inner side of the mold; the reason for this will be obvious when you see how beautifully the parts will fit together; now make three or four grooves in the horizontal plane of the mold,



thus: we make one oblong, another round, one large, another small, quite unlike for convenience sake; this done, oil every groove and all

the edges just formed by your knife.

The mold being now thoroughly oiled with the brush, except, of course, the inside, reset the fruit; pin the thick brown paper around the mold which contains it, so as to form a case, which must be, at least, two inches higher than the fruit as it stands in the mold.

The vessel in which you have mixed the plaster, as well as the spoon, being perfectly cleaned, mix again; this time pour the plaster into the paper case; it will cover the fruit and run down the grooves forming nice locks; when hard enough to remove the paper, take hold of the plaster with both hands, and pull the two parts asunder, remove the fruit which was entirely encased in the plaster, and you will have a nice mold with firm locks. If our directions are carefully followed, there will be little need of trimming the last part.

Should there be a few holes in your mold, mix up a little fresh plaster, and insert it with the point of your knife, smoothing and trimming the edges with your fingers.

The molds being perfectly made, set them in a warm oven, or in an airy place, to dry; they will not be hard enough for use for three or four weeks, when they will become hard as stone, and do many years' service. We have on hand some peach molds which we have used these ten years; and, for aught we know, they will be good for ten years to come.

Do not expect to make the very best molds at the first attempt. The plaster hardens so quickly that you must have a little practice in order to get things just right. Again, if you stir it too much or too little, it will in the first instance lose its strength, and in the second be lumpy. Be sure to have every thing perfectly cleaned at every mixing.

We recommend Experience as the best of teachers; she has treated us very kindly, and will be to you what she has ever been to others.

Sometimes we make one mold in three or four pieces, of course mixing fresh plaster, and making new locks for every additional piece.

While we advise you to mix but little plaster at a time, until you can mix it easily, we wish you to have several things in readiness, that you may use up *all* you mix. About a pint of the mixture would be sufficient for the half mold of a middling sized peach, an egg, and a nut; therefore it is best to have as many things in readiness, otherwise you must throw away your superabundant mixture. Now that we have told you *how* to make molds, we must lead your attention to the forms of the fruit, or whatever you intend for your model.

If you wish to make a mold from an ear of corn, in which the grains are irregular, it will be almost impossible for you to make it in two pieces. Try it, and you will see that you can not get the ear from the mold without breaking it; and this will teach you that unless the model can be easily removed from the plaster, it is worthless, inasmuch as you could not take an object in wax safely from such a mold. (See engraving.)

In order to obviate all difficulty, either choose such fruits, etc., as can be made in a mold of two parts, or make your mold in three or more parts, according to the fruit.

Molds for small wax dolls can be made in two parts, the doll placed in the plaster in a lying position.

Molds for dolls' heads of medium size may be made in two parts, and left open where the head is fastened on the body. Cut the plaster off level on the open side.

Molds for sheep, lambs, and dogs, (lying down,) also for human hands, may be made in the same way. If you wish to take the mold of a hand, be sure to oil it nicely (that is, to oil it without leaving oil standing on the surface) before laying on the plaster; leave the opening at the wrist.

When you have succeeded in making good molds, you can try your skill at plaster fruits and figures. As much of your success will depend upon the non-adhesion of the plaster to the model, remember the oil and tallow.

Mix the plaster as for molds; pour into the mold as soon as it thickens on the sides; pour out that which remains, if you wish your mold hollow.

Should you wish to make plaster fruit, you must cut an opening in your mold, (while it is fresh, of course,) to admit the thin plaster being poured from the spout of the vessel in which it is mixed.

MOSS WORK.



COLLECTING and arranging, in various forms of grace and beauty, the delicate and many-colored mosses with which our fields and forests abound, has long been a favorite pastime with all lovers of the beautiful in nature. A fertile imagination and inventive mind will readily perceive the many objects for which moss work is well

adapted — vases neatly and tastefully covered with delicate mosses, arranged with an eye to the harmony of colors, are very appropriate for holding dried grasses; crosses, little towers, “ancient and moss-grown,” for watch stands; frames for holding collections of leaves, grasses, or flowers, — indeed, it is needless to particularize. Beautiful landscapes can be made, closely resembling nature.

Collect all the varieties of wood moss, beautiful bits of bark, and dried leaves, within your reach. Make a design, perhaps of a landscape, in which are ruins, bridges, rocks, etc. Paint a sky as in water colors, then cut and glue thin bits of bark and moss on the ruins; moss on the rocks; dried algæ or forest leaves on the distant mountains, and the bright-colored and green mosses, of various hues, on the foreground. Such a landscape is calculated to draw out the ingenuity of the pupil, and requires no little study, and when well done, is a very pleasant picture. Set in a deep frame.

SEA WEED.



THE sea shore is an inexhaustible source of pleasure and instruction; and to one who has a taste for the beautiful, or who loves to search out the wonders of the ocean, and trace in them the "foot-prints of the Creator," new avenues are constantly being opened for the acquisition of knowledge, and the means of rational and elevating pleasures.

The great variety of sea weeds, their beauty and delicacy, and the graceful and attractive forms in which they can be arranged by skillful hands, have given to their collection and arrangement a deserved popularity among all frequenters of the sea shore; and it is a pleasant sight to see groups of children and adults, wandering along the surf-worn beach, selecting the delicate fringes of moss; and afterward, to see the fruit of their labors arranged in beautiful groupings, their bright colors well preserved, and the whole forming a picture pleasing to the eye and elevating to the taste.

After having collected your sea weeds, throw them into fresh water; cut a piece of paper relative to the size of the weed, oil the surface, and put it under the weed you are about to lay out; spread with a camel's hair pencil, or pick apart with a pin; we prefer the former. Great care, patience, and delicacy of handling are necessary in this process, for much of the beauty of the specimen depends upon preserving the minute thread-like fibers of the weed.

Trace out each thread, separating them all, and giving them such a position on the paper as will show the plant to the best advantage. Then gently raise the paper from the water, holding it in a slanting direction to let the water run off. Then put in press. A good way to make the press is to put three layers of blotting paper on a board, and upon this place your specimens; over this, muslin or linen, and over that, paper again, and then another board. Dry the paper and cloths above if necessary to facilitate the process.

Take your specimens from the papers and arrange on paper in bouquets, wreaths, or what you like, adjusting them according to the different colors, and thus obtain a pleasing variety; secure the ends neatly with gum arabic. It is well to brush over the coarser kinds of algæ with spirits of turpentine, in which a very little gum mastic has been dissolved.

Having arranged beautiful specimens of moss and sea weeds, we sometimes cut a very small basket through the middle, and sew it on the paper in front of our specimens; then we fill our basket with various kinds of moss, which, standing out in relief against that gummed on the paper, presents a basket of moss to the admiring eye of the lover of nature.

“There’s beauty in the sea.”

A lady of our acquaintance, who has been in the habit of spending much time in collecting sea-weeds, tells us that she filled no less than forty little baskets with moss, in one season, for presents to friends. We are so happy as to have one of them hanging in our parlor, which does great credit to the artist, so beautiful are the combination of colors and the delicacy and taste displayed in their arrangement.

HAIR WORK.



O make hair flowers we need live hair, that is, hair from the head of a living person; annealed wire, very fine; pearl or gold beads, scissors, a pair of pinchers, a bit of whalebone, and knitting needles of three sizes. Brush the hair as smoothly as possible, and tie in bunches. Double a piece of wire in the middle, and twist about two inches.

Let us begin with a leaf. Take the twisted wire between the thumb and fore finger of the left hand for a handle, as it were; fasten to this the ends of a thin strand of smooth hair: (it is well to draw it several times between the thumb and finger to make it glossy)

Bend the ends of the wire to the right and left; then, holding the end of a knitting needle horizontally over the twist of the wire, pass the strand of hair around the needle, and fasten it by crossing the wires below to the right and left. So continue till you have woven sufficient for the leaf. Slip from the needle, and you have nice loops neatly fastened by a fine wire much resembling gimp. Bend this into the desired shape, twist the ends of the wire, and cover with silk braid as near the color of the hair as possible. The leaves may be made of different sizes, and varied by the size of the knitting needle.

To make daisies, asters, etc., turn this looped wire round and round to present a flat surface; make firm by fine wire underneath.

It is well to have a pattern. If you can not see hair flowers, take natural ones, and by fastening strands of hair to a wire, and binding with floss, endeavor to imitate Nature.

With the pinchers you make your wire fast, and with the whalebone you obtain the desired width of a petal by laying the hair over it. Thus, for a pansy, smooth a short strand of hair, fasten one end to a bit of wire, then pass the hair over the whalebone, winding to the same wire, but lower down; this makes it firm, and enables you to give it what form you like, by bending the wire. Make five of these petals, and set them around a wire having a pearl bead on its end.

Forget-me-not is a pretty little flower, and easy to make; put a gold bead in the middle.

Roses require much time and great care; buds are easily made.

Many persons moisten the hair with oil; but our experience teaches us that the work is much more durable and neater when smoothed by the friction of the fingers.

As it is often necessary to economize the hair as much as possible, it is well to state that as a general rule a piece of hair work is half the length of the hairs which make it. If you have but a scant pattern, use the *short* hairs first, not the shortest, but beginning with those perhaps of five inches in length, and then taking those which are longer.

Practice in this art is of more value than precept. The artist will find the difficulties gradually disappear as the work is persevered in, and to study specimens of hair work, now so common, will assist the learner in many points.

FEATHER FLOWERS.



HOSE who are so fortunate as to have in their possession fine feathers can certainly make fine flowers. Have at hand gum in solution, French paper for winding stems, and wire of different sizes. Draw the under side of the feather gently over the edge of your penknife to bend it in the required direction; make a

lump of bookbinder's thick paste or wax on the end of a wire for a stalk, and begin your flower by sticking the smallest sized feathers into it for a center; place other feathers of the same kind, but larger in size, around in order. Choose green feathers for leaves and calyx, and pure white ones for japonicas and white roses. Twist the ends of the same on a wire, and make fast with gum, glue, paste, or other similar adhesive substance. Be careful to select feathers of the same kind for the same flower. Arrange in a vase, and cover to keep free from dust. In this, as in all kinds of fancy work, let taste and neatness govern the process.

It will often be found necessary to color the feathers to give the desired variety of hues; and this can easily be done by attending to the following directions: Put the feathers into hot water, then drain them; rinse two or three times in clear cold water; place them on a tray, over which a cloth has been spread, before a good fire; as they dry, draw them gently into shape between the thumb and finger.

To dye Feathers blue. — Into about three cents' worth of oil of vitriol mix as much of the best indigo in powder; let it stand one

or two days. When wanted for use, shake it well, and into a quart of boiling water put one table-spoonful of the liquid. Stir well, put the feathers in, and let them simmer a few minutes.

Yellow. — Put a table-spoonful of the best turmeric into a quart of boiling water; when well mixed, put in the feathers. More or less turmeric gives different shades.

For *orange*, add a small quantity of soda to the preparation for yellow.

Pink. — Three good pink saucers to a quart of boiling water, with a small quantity of cream of tartar. If a deep color is required, use four saucers. Let the feathers remain in this dye several hours.

Red. — Dissolve a tea-spoonful of cream of tartar in a quart of boiling water; put in one tea-spoonful of prepared cochineal, and then a few drops of muriate of tin. This dye is expensive; therefore use the plumage of the bird ibis.

Lilac. — About two tea-spoonfuls of cudbear in a quart of boiling water; let it simmer a few minutes before you put in the feathers. A small quantity of cream of tartar turns the color from lilac to amethyst.

Bunches of orange blossoms can be made with good success in feathers; the buds are to be made of starch and gum mixed; the stamens of ground rice, colored with turmeric, into which the gummed ends of manilla grass have been dipped.

The “untutored savages” of the Pacific Islands make beautiful feather flowers, rivaling the natural ones in delicacy and beauty. Pinks, orange blossoms, and roses of exquisite workmanship are often brought from these “heathen lands” which would put to the blush our most accomplished artists. Old ostrich feathers can be made to look as well as new by holding over hot steam, then drawing each vane of the feather separately over a knife to curl it.

CONE WORK.



S ELECT good clear cones, and dissect some which have handsome, large scales, and brush them clean; lay nice white putty, or a similar adhesive substance, smoothly on your frame; set into this putty whole cones, large and small, in such figures as suit your taste, and fill up the entire groundwork with the scales, lapping one neatly over the other.

Cut oval and round frames for light pictures, from bookbinder's pasteboard, and cover with the scales in layers or rows. Scallop the edges with small whole cones, set in large cones surrounded by little ones equidistant, if the frame be broad, and fill in with the scales. When dry, take out those which are not firm, and replace. Add acorns *ad libitum*. Varnish the whole once or twice. If you wish something nice, go over every part with a fine brush, and leave no varnish standing in drops.

Cones can be found by almost any one in an hour's walk through pine woods. Indeed, if one has a taste for the beautiful, and is quick in perception, it is impossible to ramble through woods and fields without finding many curiosities in the shape of mosses, grasses, cones, etc.

SHELL WORK.



THIS is very pretty for vases, frames, boxes, etc. Many shell flowers, animals, birds, and the like, are brought here from the Mediterranean. We have seen some that we would like to own; but in general they have a stiff appearance. However, we will tell you how they are made.

Assort your shells according to size and color — the more rice and other small shells you have, the better. Melt white wax and glue together, two parts of the former and one of the latter. Have a clear idea of what you intend to do; or, what is better, make a pattern before you begin to set your shells. If you will ornament a box, a rose in the center looks well. Take thin round shells, those most resembling rose leaves, of the smaller size, and dipping the lower ends in the hot wax mixture, set them close together for the center of a rose; place other similar shaped shells around in circles, the largest outward. Care must be taken to form the shells into perfect circles, and to take up wax enough to make them adhere to the cover. Shells of different form, say more oblong, can be used for leaves. After arranging such figures as you like with the shells you have, fill up the spaces with the very small ones. Rice shells are the prettiest, but they are costly. Some prefer sticking the shells into a puttied surface, which does very well. Varnish with a *very little* copal varnish, *using great care*.

Animals are made of thick pasteboard, or turned in wood, and covered with one kind of shell.

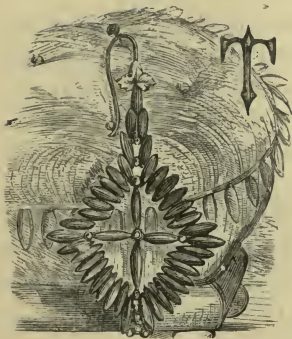
Shell Flowers. — The basis of each large flower is a piece of thick round pasteboard. The shells for petals are sometimes tinged with water color, and the leaves made of green paper. Delicate sprays are made by threading small shells on fine wire. Thus made, with half a dozen huge black berries of wax on the top, in a vase all covered with shells, it will pass for the imported article.

Ornaments for the hair are made from rice shells, thus: File down the conical end of the shell, and clean out the opposite end with a pin; pass a silver wire (a guitar string) through the filed end, bring it down and twist for a stalk. From fifteen to twenty pairs on one branch, neatly covered with white or green silk floss. Two or three such stalks of different lengths are sufficient.

Satin beads wired with a guitar string, and wound in pairs to form sprigs, with now and then a tendril, are beautiful for evening dress.

In almost every family, enough shells, small and appropriate, can be found to make some ornamental article. Sea captains bring home valuable collections; and who among our readers has not some friends or acquaintances who “go down to the sea in ships”?

WILD TAMARIND SEED WORK.



THE wild tamarind seeds are brought into our market from the West Indies. They are about the size and color of apple seeds, but hard as stone. We tried various chemical solutions to soften them, but in vain; finally, we soaked them in air-slaked lime some eight or ten hours, then wiped them with a rag wet in sweet oil. After this

process they were soft enough to admit of being pierced by a needle.

Our lady friends used them, with gold and silver beads, for purses, bags, baskets, bracelets, ear-drops, etc. When dried they returned to their pristine hardness, and formed durable and useful ornaments.

Seeds of Cucumber and Musk Melon can be worked with steel beads so as to make handsome dress bags and table ornaments. They should be lined with silk appropriate to the beads; for example, a rich green, cherry color, or black.

A person of taste can make many very pretty things by arranging the seeds and varying the beads. Try it for bags, mats, catchalls, baskets, plates, and table ornaments.

IMITATION PEARL WORK FOR EMBROIDERY.

WE do not think that a preparation of fish scales has ever been used in this country instead of the so much admired pearl; and so we give it to our readers, knowing that they will like something entirely new.

Take the shining scales from a carp, or any other fish — the larger the scales, the better; put them in strong salt water over night; lay them on a linen cloth or smooth board; wipe them carefully on both sides, and lay them between clean, strong paper, under a board, on which place a weight; let them remain a day or two, until the scales are pressed dry and become hard. Draw something, say an ivy leaf, on strong drawing paper; cut it out, and lay it on each scale as a pattern by which to cut the scales with very fine scissors. Such a pattern, however, is superfluous to persons acquainted with drawing, who can cut leaves of that kind without one. Vein your scale leaves with a fine steel needle; do it slowly, bearing on hard to give clearness: the leaves are now ready.

Stretch a rich, dark-colored silk velvet tightly in an embroidery frame; place the pattern, which you intend to copy, before you, and imitate it by sewing the scale leaves, one at a time, on the velvet, with fine gold thread, and the leaf stalks and tendrils embroidered with the same. It is well to draw the thread through water before using it, to render it flexible.

The beautiful effect produced by this simple process fully repays one for the trouble. That manifold changes may be made according to the taste and ingenuity of the copyist, is evident to the reader.

PAPER FLOWERS.



OCASIONALLY we see very handsome paper flowers ; but then they are made by persons of taste with great care, and from the best of French tissue paper.

Dip a large camel's hair pencil in thin gum arabic, and brush quickly over the whole surface of the paper from which you intend to cut your flower ; this fills the pores of the paper, and gives it a little stiffness.

Cut roses, japonicas, etc., from paper patterns ; then paint with water color. Form the petal with your fingers and a pair of scissors. Cut a fringe of yellow paper for stamens. Make your leaves and calyx of green tissue paper, well sized with gum. Cover fine well-annealed wire with green paper for stalks, and fasten the parts of the flower together with gum.

For a daisy, chrysanthemum, or aster, double the paper two or three times ; cut down two thirds ; roll the uncut side firmly round and round the bent end of a piece of wire suitable for the stalk.

Buds, pericarps, etc., are made either by stuffing with a bit of cotton, or winding up paper.

Variegated pinks look well. Paint strips of paper in splashes here and there, as you see on the petal of the carnation — some very dark carmine, some merely light touches. Cut off suitable width for petals, and wind around a paper center. Take natural flowers for models.



TO MAKE TRANSPARENCIES.

TAKE some prettily colored landscape, and cut a slit into the broad lights of it with a penknife; put a white paper of medium thickness behind it, and interline with orange or rose-colored paper; bind the three — that is, the landscape, the colored paper, and the paper which forms the back — together with some suitable color for a frame; now separate the cut edges of your landscape by pressing them apart. Hang up in the window, and when the sun shines through, the effect is beautiful. Try it; we are sure you will be pleased.

An engraving prepared as for Grecian painting is very pretty for a screen, or to hang in the window. Lamp shades may be made in this way, and many pretty designs will suggest themselves; bouquets, wreaths, vines, running round the shade, etc. Also still more beautiful is the antique style, before painting.


DIRECTIONS FOR TAKING LEAF IMPRESSIONS.



OLD oiled paper in the smoke of a lamp, or of pitch, until it becomes coated with the smoke ; to this paper apply the leaf of which you wish an impression, having previously warmed it between your hands, that it may be pliable ; place the lower surface of the leaf upon the blackened surface of the oiled paper, that the numerous veins that are so prominent on this side may receive from the paper a portion of the smoke ; lay a paper over the leaf, and then press it gently upon the smoked paper, with the fingers or with a small roller, (covered with woolen cloth, or some like soft material,) so that every part of the leaf may come in contact with the sooted oil paper. A coating of the smoke will adhere to the leaf. Then remove the leaf carefully, and place the blackened surface on a piece of white paper, not ruled, or in a book prepared for the purpose, covering the leaf with a clean slip of paper, and pressing upon it with the fingers or roller, as before. Thus may be obtained the impression of a leaf, showing the perfect outlines, together with an accurate exhibition of the veins which extend in every direction through it, more correctly than the finest drawing. And this process is so simple, and the materials so easily obtained, that any person, with a little practice to enable him to apply the right quantity of smoke to the oil paper and give the leaf a proper pressure, can prepare beautiful leaf impressions, such as a naturalist would be proud to possess.

Specimens thus prepared can be neatly preserved in a book form, interleaving the impressions with tissue paper.

TO DRY BOTANICAL SPECIMENS FOR PRESERVATION.

HE plants you wish to preserve should be gathered when the weather is dry ; and after placing the ends in water, let them remain in a cool place till the next day. When about to be submitted to the process of drying, place each plant between several sheets of blotting paper, and iron it with a large smooth heater pretty strongly warmed, till all the moisture is dissipated. Colors may thus be fixed which otherwise become pale or nearly white.

Some plants require more moderate heat than others, and herein consists the nicety of the experiment ; but I have generally found, that if the iron be not too hot, and is passed rapidly, yet carefully, over the surface of the blotting paper, it answers the purpose equally well with plants of almost every variety of hue and thickness. In compound flowers, with those also of a stubborn and solid form, some little care and skill are required in cutting away the under part, by which means the profile and forms of the flowers will be more distinctly exhibited. This is especially necessary when the method employed by Major Velley is adopted, viz., to fix the flowers and fruit down securely with gum upon the paper, previous to ironing, by which means they become almost incorporated with the surface. When this very delicate process is attempted, blotting paper should be laid under every part excepting the blossoms, in order to prevent staining the white paper. Great care must be taken to keep preserved specimens in a dry place, and also to handle them gently ; and thus they can be kept a long time, affording a source of great pleasure.

RÉPOUSSÉ WORK, OR EMBOSSING SHEET BRASS.

RÉPOUSSÉ means “pushed out,” and is the name applied to a kind of work largely practised at present by those who are fond of artistic and beautiful things, and feel it in their power to make with their own hands these much desired objects. The work consists in hammering down portions of the sheet of metal, which causes other portions of the sheet to rise in relief. Lay your sheet of brass on a smooth board; a design is then drawn upon the brass; these lines are then stamped or dented in with a hammer and the point of an outlining instrument. With the hammer and the point of another instrument you then indent the background. As you push or dent the background in you will find your design rising in relief. When this is done, polish your brass and your work is finished. This is a rough sketch of the work, of course, but will give the reader a general idea as to what it consists in. Now let us give a systematic lesson in this work. The materials are: —

A smooth, soft pine board or thick sheet of lead.

A chaser's hammer (to be had at a hardware store) or a mallet which comes for the purpose. An ordinary tack-hammer may be used, but the end being small, you are sometimes apt to miss in striking at the head of your punch, in which case you hammer your fingers instead.

A tracer or bordering-tool.

A background punch.

A prick-punch for making holes in the corners of your sheet of brass by which to screw it down to your board.

Four small screws to screw your sheet of brass down with.

A screw-driver.

We have here given the simplest list of articles *necessary*.

Boxes of tools come already put up for this work.*

Sheet brass comes of various thicknesses, varying from sheets as pliable and thin almost as letter-paper, to brass so thick that it requires a tin-man with proper tools to bend it.

Mallets come made of steel, iron, or wood. A wooden mallet is heavy enough for ordinary work on thin brass; a metal one is necessary for sheet brass, No. 25.

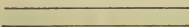
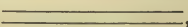
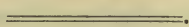
* The publishers of this book supply such boxes, at a low cost, containing all articles desired.

Punches look like large nails without heads. The point with which you indent the brass is flattened not sharp, and is roughened or has lines across it dividing it into squares like a scal. These points are finished in various ways, some have crescents on them, some circles, some diamonds, etc., in endless variety, and whatever is on them they will stamp upon the background. After you have worked enough to know what you want, you will probably invent new patterns which can be made for you by any one accustomed to working in metal. At any rate you will soon find yourself adding to your punches, buying new ones with differing ends.

It is the best plan to begin by taking a sheet of the very thin brass, making holes in the corners and screwing it down on one corner of your board. Then take your pencil, draw some simple figures upon it, a square, then a diamond, then a circle, if you do this in pencil and find it hard to see go over your outline with a pen and ink. Then take your tracer, borderer, or outliner, whichever you prefer to call it, in your left hand, your hammer in your right, and go over your outline by placing the point of your instrument on the brass and giving it blows upon the other end with the hammer. The best outliner is a short one, that is, one which has

a small point and makes a short line, for it is easier to go round a curve with it. Hammer lightly and make a faint outline, do not dent in deep or you will make the edges of your brass curl up. You will have to go over this outline again by and by, for it will become fainter. Now this outline must be very carefully done, and to this you must pay strict attention. Your outlining punch will make a line like this — if a plain one, or like this if it is a serrated or toothed one (the latter is the usual one). Now this outline must be continuous, that is, it must have no breaks in it and must look like this when done, and not like this which is thoroughly bad and careless. The reason of the broken line is that the outliner has been moved along too quickly. It has been placed on the brass, a blow of the hammer has been given, it has been moved along and no care has been taken in looking to see that the outliner is placed so as to touch the last dot of the previous series of dots; or the end of the previous line thus —————, not thus ———— ———— ————. Therefore it is recommended that you should practise for a while on the thin sheet of brass fastened on the corner of your board. After making half a dozen lines you will understand what is

meant by this description. You will soon be able to calculate with only a glance where to place your outline so as to make a continuous line; but at first you must look conscientiously until you are sure about what you are doing.

When a good straight line can be made, you may proceed to make a curved one, outlining a circle drawn upon your piece of brass. When you have outlined several squares, circles, diamonds, etc., you may proceed to outline a star. Then you may make a crescent, then a heart, after which you may make a clover pattern; if you have no guide for this, copy the figure on the ace of clubs in playing cards. Then make two parallel lines, first about this distance apart , then nearer together , then still nearer . When you have practised all these lines you may go over all the background that is left with your background punch. This will cover your background with dents or patterns according to the design on the end of your punch. Do not punch all in one spot at first, but go over the whole surface, punching here and there; then go over it again punching more closely until you cover it thickly with impressions of your punch. After the first time you may strike harder with your hammer, only be careful not to cut or break through your metal.

You will soon become accustomed to your instruments and will find out how you can best work them into the irregular spaces about the edge of your design by slanting them and bearing on one edge only, etc. Work up to the edge of your design as close as you can, the closer and deeper you indent the more your design will stand out or rise in relief. After you have practised on this thin brass you may work on a thicker sheet. No. 25 is the thickness usually chosen, it being pliable enough to work easily and yet stiff enough to make substantial plates, ash-trays, picture frames, etc.

One of the simplest things to make is a "finger-plate" for a door, that is, a piece of brass about seven or eight inches long and three inches broad, to go above the handle of a door where it often becomes defaced by handling. After this is made any tin-man will mount it for you in a narrow brass frame in which holes must be made for the screws that screw it to the door. Another easy thing to make is a sconce for a candle. Take a piece of No. 25 brass, have it cut into a strip four inches by twelve, turn up three inches at one end at right angles with the rest, punch a round hole in the straight end near the top to hang it up by; then draw your design on the face of the portion hanging on the wall. When it is hammered take it to a

tin-man and get him to solder a socket on to the turned-up end to hold a candle.

To make a plaque, get a square sheet of brass sixteen inches by sixteen; get a circle described on it with a stiff pair of carpenter's compasses, exactly sixteen inches in diameter. And then within this another circle of fifteen inches in diameter; if you have no compasses or cannot get this done you may lay a plate, which you feel sure is even and true, upon your brass, then place a smaller plate within this circle and make a smaller one, always at least an inch of space between the two circles. This space must never be hammered. It is to be turned up later to make a rim to your plaque. Put your screws in the corners outside of the outer circle. When your piece of brass is screwed down, proceed to make your design and hammer your plaque. After it is done take it to a tin-man and he will turn up the rim for you. Ash-trays may be made in the same way or square; if square, mark off two squares, one within the other, for a rim — never forget to do this with every article that is to have a rim. In making a picture-frame allow enough to turn in around the square opening for the picture, that is, draw a square the size of the opening you wish to have for the picture and a square within that which you

wish the tin-man to cut out; the space between will be turned under like the hem in sewing, and will give a prettier finish. The same should be done with the outer edge for it will be needed when you take it to a frame-maker to have a back put on. Whatever article you make, which you do not complete yourself, should have a little margin, as it will be required in the final making up of the article in all probability. We have not space here to enumerate all the various things which may be made in brass, the bodies of lamps, fender-rails, mirror and picture frames, mirror backs, panels to hang on the wall or set in cabinets, pieces to set in fire-screens, tiles, etc. We have given some of the simplest things, the reader can go on elaborating indefinitely and will probably discover a hundred useful and pretty things which may be made in this way. Remember that the best work is not the most elaborate, but that the simplest, strongest designs are the most artistic. Do not cut up the surface too much, but leave some broad spaces of plain brass in high relief to reflect the light. When your work is done, you may polish it with rotten-stone, raw linseed oil, and turpentine, on a chamois skin. Rub the rotten-stone into the background and it will look like antique

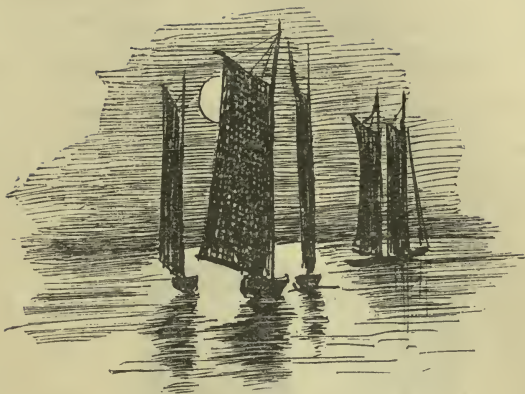
brass. If you wish it to look like new brass rub the rotten-stone out with a stiff brush.

Deep Chasing. — This must be done with thicker brass. In this style of work you hammer on the back as well as the front, pushing out your design into high relief. For this you will find it necessary to have a bed of pitch or composition. This is to make a yielding but tough substance under your brass, which will yield gradually, but is still capable of yielding to almost any extent under the pressure of your brass as you hammer it in. To make this bed take brick-dust, plaster of Paris, fine sand or ashes, and mix any one of them with pitch or resin, and a very small quantity of tallow or turpentine. Lay your brass in a bed of this, and you will find it can be hammered in very easily. When you wish to hammer out from the inside, turn your article over and lay it face downward on the pitch and then hammer in those parts which you wish to protrude on the front side; you can raise portions an inch or two inches in this way. If you have an article which will hold it, melt some pitch and pour into it, when it is hardened somewhat, proceed as before. To get it out you must heat your brass article until the pitch can be poured out again.

We have, in this chapter, given the mere rudiments of

the art of hammering brass, but the publishers of this work are now preparing a separate book which will deal solely with working in brass and other metals, and will give directions on the subject of the most minute and complete description, The publishers also supply original designs for plaques, trays, frames, etc.

NOTE.— Since the above was written new methods have been discovered, which are given in detail, and with illustrations, in a separate book now in preparation, by the publishers, S. W. TILTON & Co., Boston.



HOW TO MAKE PHOTOGRAPHS.

AMATEUR PHOTOGRAPHY has for years been held in high estimation throughout Great Britain, as a means of recreation, by persons of rank, title, men eminent in the legal profession, in literature, and in science. Although but recently introduced in this country in a popular form, so that outfits are sold at prices ranging down to \$10.00, it is destined to maintain a high place among art studies and amusements. Recent improvements in photography have made possible the

production of the highest-class pictures, through the medium of an equipment, which any one should be able to manipulate, and yet so light in weight as not to be burdensome. The apparatus is graceful in appearance, and many of the fair sex have become expert in its use.



Recreation that carries with it stimulating exercise is what is needed in this country, and Herbert Spencer's mild rebuke should not be passed unheeded by thoughtful men. Amateur photography may venture a claim for consideration, as the practice of it is educating,

refining and health-giving. It is a certain cure for mental weariness, and no one who has an artistic appreciation of the beautiful can fail to be interested in the art.

The development of amateur photography has been marked and rapid during the two years that have followed the bold move of the Scovill Manufacturing Company, of New York, which brought it into immediate popularity; and the innumerable useful purposes that it can be made to serve have been demonstrated. Wide-awake correspondents and authors now enclose with their manuscript, and send to the publishers, photographic prints, or negatives, from which engravings are made for the illustration of their articles or stories. The artist, with a camera looking like a hand-satchel, photographs, without exciting the suspicion of the unconscious subject, the beautiful, quaint, or repulsive features, which in due time will be copied on canvas. Similarly equipped, the detective is more than ever to be feared by the criminal. Architects, manufacturers, real-estate or insurance agents, and men engaged in other branches of business, for a variety of purposes, compel the camera to serve them well.

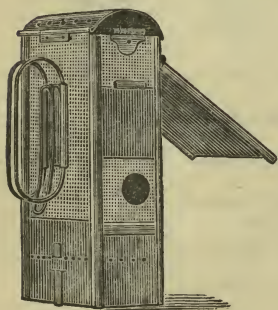
Pictures of places of historic interest, and of the gems of scenery to be found in our own or in foreign lands, make an adornment for the home, prized for the reminiscences which are associated with each one. These pictures can be handsomely framed, or gathered in portfolios and albums. From the same negatives, transparencies, or magic-lantern slides, may also be made. As the latter are prepared with so little trouble, a form of parlor entertainment has been introduced, which consists of the employment of a magic-lantern, or stereopticon, and the exhibition to a circle of friends of the pictures taken, developed and finished by the amateur himself. The requirements for securing stereoscopic pictures or photographs of microscopic objects are simple and quite inexpensive. For instantaneous photography, one needs but to substitute a quick-working lens, with a drop or shutter, for the one in ordinary use, also to provide himself with extra sensitive plates, and the impressions of rapidly moving objects are fixed on the sensitive film of the plates, as though the fleeting panorama had been instantly held in check. There are easy methods for copying manuscript, engravings, and for enlarging small pictures.

This sketch of the scope of amateur photography is but in outline. The lessons that follow are more detailed and complete.

PICTURE-MAKING.

PICTURE-MAKING is quite simple, and the details are therefore briefly given. Any person of average intelligence may feel certain that he can succeed in making good photographs if he purchases an equipment made by reliable manufacturers.

FILLING THE PLATE-HOLDER. — If this is done in



Ruby Lantern.

the daytime, a closet or room is selected, and all white light is excluded from it. It is a difficult task to make this exclusion absolute; one ray of white light will spoil a sensitive plate, and therefore the evening is generally chosen to develop negatives, and for illumination

a light from a ruby lantern is employed. Open a


package of gelatine plates (these plates are glass with a coating of gelatine on one side) and place one of them in a dry plate-holder, with the sensitive (not the glossy) side facing outward. Handle the plates thus,  After putting into holders as many sensitive plates as are needed for a day's sport, pack the outfit so that it can be carried as shown in the illustration.



Plate in Hand.

TAKING THE PICTURE. — For field service, a camera, a number of plate-holders filled with sensitive plates, a lens, tripod, carrying case, and focussing cloth are needed. When these have been taken to a place where the views look inviting, fasten the camera on the tripod. Throw the focussing cloth over your head, gather it under



Amateur with Kit Packed.

your chin, draw out the back of the camera thus extending the bellows, and continue the movement until the image on the ground glass appears most distinct.

Then fasten the back of the camera. This is called "focussing." At first glance an inexperienced person



Apparatus Set Up.

sees no reflection on the ground glass, but the eye soon becomes practised to perceiving the inverted image there. Substitute a plate-holder for the ground glass, see that the cap is on the lens, pull the slide out of the holder, and place it on the top of the camera, or in a convenient place. If everything is now in readiness, and the time for

exposing the sensitive plate determined, uncap the lens, recapping it at the end of the allotted time, and replacing the slide in the holder. Make an entry in your note-book of a similar import to this:—

No. of Holder.	No. of Plate.	Lens.	Stop.	Exposure in Seconds.	Time of Day.	REMARKS. Condition of Light, Subject, etc.
1	1	6-inch.	$\frac{1}{4}$	15	10 A.M.	Ocean View. Bright Sunlight.

After you have picture impressions on each sensitive film rearrange your outfit in compact shape and return home. The cuts on the following page show the different styles of cameras.

MAKING NEGATIVES. — Amateurs may content themselves with making the exposures, and send their plates in a light tight negative box to some photographer, who, for a small price, will produce the finished pictures and mount them on cardboard or in albums. It is not essential, when one attends to these details himself, that they should



Negative Box.

be done at once. Months may elapse, and the dry plates be carried hundreds of miles without deterioration. The chemical outfit for making negatives comprises the following items: Two vulcanite trays, a glass graduate, a set of small scales and weights for weighing chemicals, a ruby lantern, a bottle of negative varnish, a package of dry plates. And of chemicals: A small quantity of bromide of ammonium, neutral oxalate of potash, protosulphate of iron, hyposulphite of

soda, alum, and sulphuric acid. These chemicals are not dangerous, nor will they injure one who handles

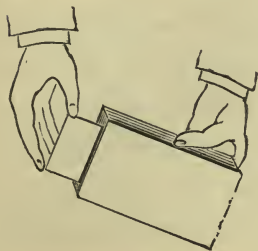


Plate Sliding out of Holder.

them, and they do not emit offensive odors. Silver stains and the disagreeable smell of collodion, belong to the old, or so-called "wet" process. When a convenient time is found, take the plate-holders into the darkened room, illuminate it

with ruby light, take the sensitive plates out of the holders, being careful not to touch their surface. Hold



Glass Graduate.

them by their edges. Place one of the sensitive plates, film side up, in a tray partly filled with water. While it remains there, mix this solution: Water twenty ounces, five ounces neutral oxalate of potash, and twenty grains of bromide of potassium. If the solution does not turn

blue litmus paper red, add a few drops of oxalic acid, enough to make it do so. A graduated glass is used to measure out the liquids. After rinsing the glass out, mix a second solution made up of water twenty ounces,

five ounces protosulphate of iron, with twenty drops of sulphuric acid added. Both of these solutions keep well. Now combine a quarter of an ounce of the latter solution with two ounces of the former, and mix them well. Pour off the water in the tray, containing the gelatine plates. Be certain not to touch the sensitive side of the plate. Flow the combined developing solution over the plate, and displace, by a touch of your finger, any air bubbles that may form. After a short time traces of the image on the sensitive film will appear. If they do not appear, pour the developing solution back into the tray, and add a quarter of an ounce more of the iron solution. Pour the strengthened solution over the plate, and look at it intently. In a short time the details of the picture may be dimly seen. Wait patiently until the milky white appearance is changed to a gray color, and then pour off the developer into a developing bottle, if you have one. Wash the plate in two changes of water. In the unused tray, mix a solution composed of water twenty ounces, and four ounces hyposulphite of soda.



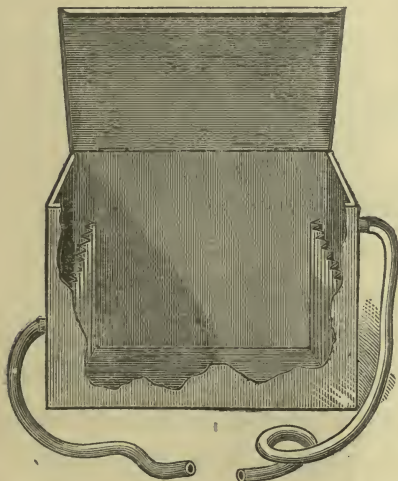
Developing
Bottle.

(Label this tray "Hypo.," and do not use it for any other purpose). [A plate-lifter is a very convenient device for taking plates out of the solutions or baths.] Change the plate to the hypo tray and let it remain there until every vestige of the milky white appearance has vanished, even from the under surface of the



Plate-Lifter.

plate. The plate can be examined by white light, which

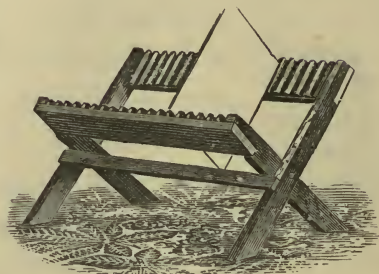


Negative Washing-box.

has no effect on it now. Wash thoroughly. A negative washing-box will be found to be of great assistance. If this washing of the plate is not done thoroughly, the hyposulphite of soda crystals will adhere to the plate and mar the

picture. Meanwhile rinse out the tray first in use, and

partially fill it with a solution, consisting of twenty ounces of water and all the alum it will hold in solution. Allow the plate to remain in the alum-bath five minutes. Cleanse your hands from any adhering



Negative Rack.

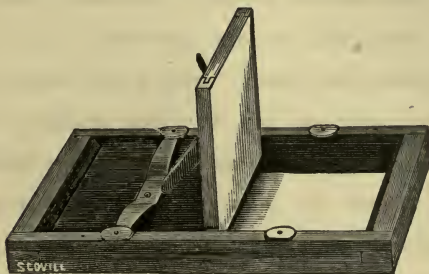
soda solution. Again wash the plate, and set it on edge to dry in a negative rack.

All of the instructions that precede can be briefly summarized:—

- 1st. Put some sensitive plates into dry plate-holders.
- 2d. Make the exposures.
- 3d. After taking a plate out of the holder, place it in a tray filled with water.
- 4th. Drain off the water and put the plate in the mixed developing solution.
- 5th. Wash the plate and place it in the soda solution.
- 6th. Wash the plate and give it an alum bath.
- 7th. Wash the plate, and set it in the rack to dry.

When perfectly dry, coat the plate over with negative varnish, and have that coating dry and harden. After this the surface of the plate may be touched by the fingers.

MAKING PRINTS FROM NEGATIVES. — At this point the work ceases to be one of faith, as the results are now to appear. An outfit of printing requisites com-



Printing-Frame.

prises a printing-frame, a porcelain pan, a vulcanite tray, some ready sensitized paper, a bottle of French azotate, a bottle of chloride of gold, a glass graduate, some hyposulphite of soda, a glass form, a Robinson Trimmer, some sheets of fine cardboard, a jar of parlor paste, and a bristle brush.

BLUE PRINTS. — If you wish to make a blue picture on a white ground, commonly called a "blue print,"

procure a package of ferro-prussiate paper. Place the negative, film side up, in a printing-frame. Upon the negative lay a piece of ferro-prussiate paper (this should be handled in a dim light) with the colored side down. Close the back of the printing-frame and fasten it by setting the springs. Carry the printing-frame to some place where the sunlight will fall upon it, and from time to time examine the print. As soon as the picture is clearly seen, take out the print and throw it into a pan containing clear water. After about twenty minutes remove the print and dry it in the sunlight. The result is a permanent blue and white picture, which will at least answer for a proof, and show the merit of your negative.

SENSITIZED PAPER PRINTS. — In the morning prepare a toning-bath sufficient for the prints to be toned that day. Put seven and one-half grains of chloride of gold in seven and one-half ounces of water. Label the bottle, "Chloride of Gold Solution." Take of water six ounces, French azotate one ounce, lastly add one and one-half ounces of the "chloride of gold solution," and you have a toning-bath which keeps well. Where the prints do not give the required tone, the bath must

be strengthened by adding to it some new solution. Place the glossy side of a sheet of sensitized paper upon the film side of the negative in the printing-frame. *Do this in a very dim light.* The printing has gone far enough when the print looks a little darker than you wish the finished picture to appear. Make as many prints from the negative as you desire. Wash the prints in several changes of water. Take a half-ounce of the toning solution and change the prints to the pan containing it, where the prints should be turned over and over to make the toning even. The toning process should go on until the dark part of the pictures have a very faint purplish tint, and the white portion is clear. Wash the pictures, but preserve the toning solution. The pictures should now be left for twenty minutes in a solution composed of four ounces of hyposulphite of soda, one ounce of common salt, and one-half ounce of washing-soda, and thirty-two ounces of water. This solution should also be prepared a day or two in advance. Give the pictures a final and effectual washing. After they are dried, lay them out one by one, and, using the Robinson Trimmer, cut them to the desired size. Now spread over the back of each,

in turn, some parlor paste, and lay them down, with the centre on the sheets of cardboard. This operation is called "mounting pictures."

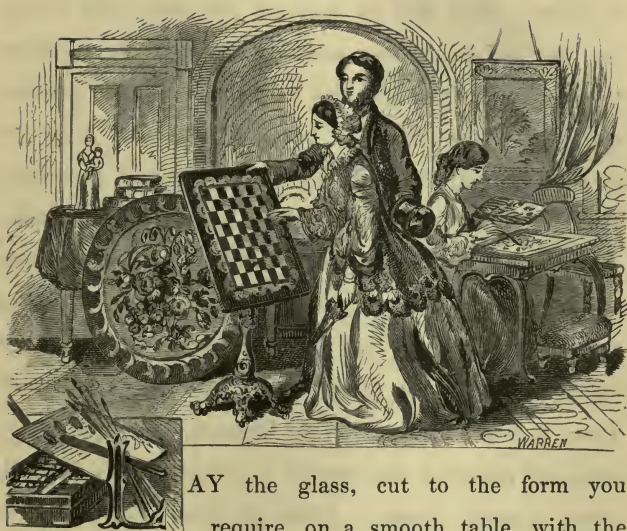
Press with a paper-cutter upon the pictures and toward their edges until you are satisfied that they will lay flat. Further more explicit and complete instructions in the



Robinson Trimmer.

making of photographs, how they can be preserved in neat shape, instructions for making stereoscopic and instantaneous pictures, transparencies, magic-lantern slides, and photographs of microscopic objects, are to be found in a book which can be obtained for fifty cents per copy, published by the Scovill Manufacturing Company of New York, entitled "How to Make Pictures."

ORIENTAL PAINTING.



TAKE the glass, cut to the form you require, on a smooth table, with the design underneath, usually flowers, birds, and frequently, when wanted for a table stand, forms for chess playing are used, gilt, etc. Then take a fine badger, or camel's hair pencil, and with the color you would have the ground when done, trace the outline of each figure not joined by another color; such must be traced with the color you

would have the figure; as, green, if a leaf or stem; for rose or flower, the color of the rose or flower. After this has been traced out as perfectly as possible, shade the leaves by laying thicker coats when you would have it darker. This will be easy, as you have only to follow the pattern. Also make the veins with a darker shade, tipping the edge with the same. A little practice will show where effect can best be obtained. Now put on your ground, which should be composed of fine white picture varnish, or, what is better, our Outside varnish, colored with any dry or tube oil colors. If black, lamp-black may be used; it should be well ground. After this is thoroughly dry, lay on and confine with this same mixture, tin foil, or tinsel, either smooth or crimped. Pearl is frequently used in the Oriental style; yet a person well practiced can imitate it perfectly with the foil, which is much cheaper. Cover the whole with black, or very dark cambric, confined with the same mixture.

The colors used must be transparent, or nearly so; oil tube colors will answer, or powders mixed well with Outside varnish. The lakes are all transparent, emerald green, raw and burnt sienna, and others which any artist colorman will inform you when buying your colors.

For gold lines, etc., draw with the varnish as if paint, and when "dry to a tack,"* lay on gold leaf. If bronze is used, it should be rubbed on before the varnish has dried, (See directions for "Bronzing," in the article on "Papier Maché," page —.)

NEW WAY OF PAINTING ON RICE-PAPER.

MAKE the outline with a dark lead pencil on clear and perfectly white paper, the same as for Oriental Painting; place the rice-paper on the top of it, and proceed to paint with the transparent colors mixed with varnish in the same manner as for Oriental; opaque colors can also be used. No difficulty will be found in painting on rice-paper with the varnish colors, and the paper will not wrinkle as it does with water-colors.

Other things will suggest themselves to the inventive mind, where this style of painting may be applied.

* "Dry to a tack," is a technical expression, and means practically dry, viz., when a coat of paint or varnish has been applied, it will, in the course of twenty-four hours, or so, dry to such an extent as not to rub off at the touch, but if one puts his hand or finger to it for a few moments, the warmth will cause it to stick. This is the condition intended as the time to lay on the gold.

PAINTING ON GROUND GLASS.

THIS is a very useful style of painting, as articles of every-day need can be made beautiful and artistic, such as lamp-shades, glass doors, vases, and, in fact, anything for which ground glass is used. The same transparent colors are used that have been already mentioned, mixed with varnish. Commence with making a very faint outline with a hard lead pencil, drawing out the design you wish to paint; then proceed to paint the flowers or birds in precisely the same way as laid down for Oriental painting. Be careful, in this style, not to have any of the outline visible. Landscapes can be done with very good effect on ground glass by proceeding according to the method of bronze painting. All the difference is painting on ground glass instead of bronze ground. Wreaths of flowers around globe shades for gas or solar lamps look very well.

DIAPHANIE.

It is scarcely necessary to specify the purposes to which this invention may be applied. Windows, lamp-shades, fire-screens, and, indeed, all other uses for which stained and ornamented glass is ordinarily employed, completely superseding the clumsy wire and other blinds. As a pleasing occupation for ladies and gentlemen, the work is one of the most useful and beautiful of the imitative arts. Cleanliness and the comparatively small cost of the materials used also recommend it to the attention of those who have leisure, either for amusement or for the purpose of profit, as windows in churches, halls, conservatories, &c., may be decorated in any style, ancient or modern, and made to appear of great beauty and value.

The unsightly view of walls, chimneys, &c., from staircase-windows, so frequently an annoyance to the eye in houses situated in towns, may be completely excluded without materially interfering with the light, and that agreeable appearance given to an apartment which stained glass invariably imparts.

The designs used for this work are produced by new processes in lithography, and possess all the richness and fullness of color obtained by the most expensive art of glass-staining.

The materials used in the work are as follows: Glass to decorate, prints or designs, a roller, a bottle of clearing-liquid, a bottle of washable varnish, a few brushes, and a bottle of vitreous cement.

The roller is employed to press the paper upon the glass, to remove the bubbles of air: this can not be accomplished without much difficulty by any other means, as the paper is apt to tear; which, of course, spoils the picture.

OBSERVATIONS. — In decorating a window, the effect as a whole is to be considered. For example, the position of a window: if at a distance or elevation from the eye, the design should be bold. Avoid, particularly if the panes be small, crowding each pane with little designs: the window-frames should not be made conspicuous by putting a border round each frame; but the same grounding should be used, as a rule, and the border placed round the whole window, so as to make it appear one window, and not a number of little ones. Neither

should the different styles be mixed. Frequently parts of several sheets are used to form one window : they should be chosen with some regard to the harmony of colors.

The smallness of the cost, and the greater ease with which the operations are performed, render it desirable to use separate glass, cut to the size of the window ; and, when finished, they may be fixed in the sash or frame with a few brads, a bead, or any similar contrivance. However, windows already fixed, if within reach, may be decorated without being removed, but it is more difficult.

One advantage in using separate pieces of glass is, that in cleaning there is no liability of damage ; besides, they may be removed at pleasure. Common sheet-glass, flat, free from specks and bubbles, should be selected.

INSTRUCTIONS. — Clean the glass, and lay it flat upon a folded cloth ; and, having obtained the necessary materials, cut out the medallions or subjects (unless the paper is to be applied in one piece), and proceed to arrange and fasten it in its appointed place in the manner hereinafter described.

If there is to be a border, that is to be next attended to. This finished, damp the printed side of the ground-

ing-paper, and lay it over. Raise one end of the glass, and, looking through it, you will perceive the exact position the subject and border occupy; trace round them carefully with a blacklead-pencil: remove the grounding, and cut it out, taking care to cut a trifle within the pencil-marks, so that the ground may overlap the subject a little.

When this is done, thoroughly damp the uncolored side of the paper with sponge and cold water; turn it over, and apply a generous coating of vitreous cement to the colored surface with a flat camel's-hair brush of moderate width, and at once apply the cemented side to the glass, pressing it down with the roller, commencing at the center, and gradually passing to the edges, which should cause the superfluity of cement to ooze out a little. This effectually removes all air-bubbles; and, if the cement has been properly applied, no difficulty will occur. Keep the white side damp during this operation.

See that your roller works well before you commence, or your work may be irrecoverably spoiled. It is advisable to have some pieces of wetted paper laid over the design, between it and the roller, to prevent the cement getting on to the roller. When the cement has become

hard and dry (about eighteen hours is sufficient), the paper can be removed by wetting it once more, and rubbing it with a piece of cloth, a sponge, or the hand. The whole of it may thus be removed, as the cement holds with considerable tenacity the colored surface on to the glass; care must, however, be taken not to rub too hard or too much when the greater portion of the paper is removed, or a blemish may thereby be caused. Be careful to keep the work wet during this operation; and, when finished, stand it by for a little time to dry; then coat it over with clearing-liquid; and, when this has become dry and hard, a coating of the washable varnish completes the work. Both the clearing-liquid and the varnish should be applied with flat camel's-hair brushes.

REMARKS. — If the colors on the sheet are not sufficiently rich, they may be heightened; or if there be any scratches or blemishes, they may be hidden by applying color of the same tint. If they are retouched with water-color, it will be requisite to thinly coat over what you paint with varnish: if you retouch it with varnish-paint, same as is used for Oriental, there will be no occasion. The same holds good if you color over with lamp-black the joinings.

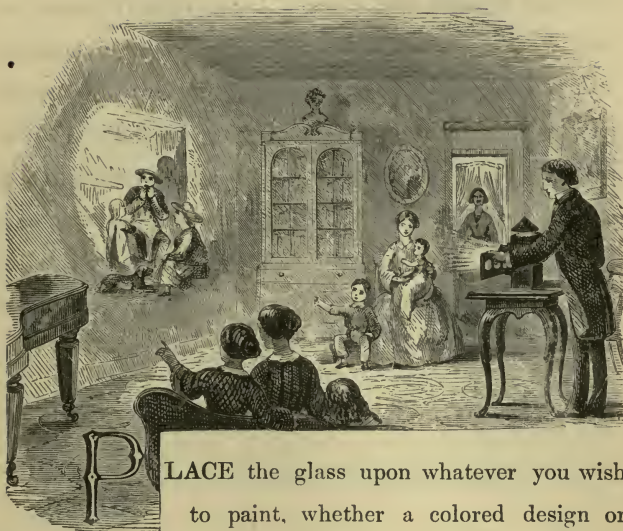
SECOND METHOD.

Give the glass an even coating of the transfer-varnish or antique-varnish, — either will do ; and, as soon as this becomes sticky, damp the back of the prints with a sponge and cold water, and apply them to the glass, and press down well with the roller, as before directed. Should the adhesion be imperfect, through the varnish drying unequally, it may be remedied by holding it a few minutes to the fire. When the varnish is quite dry, the back of the print should have one or two coatings of clearing-varnish ; if two, the first must be dry before the second is applied. Allow the work to remain a day or so, and apply a coating of copal-varnish. The joinings can be penciled over with lampblack.

SHEETS OF PLAIN COLORS.

Very pretty windows may be made with the sheets of plain colors, by cutting out the design with a sharp pen-knife, and applying it to the glass, afterwards entirely covering the window with a second color : thus, if blue has been first put upon the glass, the design cut out, and another sheet of crimson is covered over the whole, the design will be crimson, relieved by purple ; or, the glass may first be entirely covered, and any design in a second color cut out and applied.

MAGIC LANTERN.



PLACE the glass upon whatever you wish to paint, whether a colored design or only a sketch, and outline with your fine brush and neutral black in the same manner as for Oriental, and paint them in with your transparent colors, the same as used in Oriental painting. If it is a landscape, make the distant mountains (if any) with a pale shade of blue and crimson lake; at a later painting add a

little yellow lake, and repeat with these three colors in different proportions until the effect required is produced. Paint the foliage with yellow lake and a little blue. For autumnal foliage, add a little burnt sienna; stems of trees, Vandyke brown and burnt sienna; flesh tints make with yellow lake, crimson lake, and burnt sienna, reduced very much with varnish. The coloring generally must be painted strong, as it is to be magnified very much when exhibited on the disk. Paint the clouds pale blue, and dab the paint, while wet, with a bit of cotton rolled into a light ball. This process, if done with care, has a very soft, fleecy effect.

Antique Painting on Glass.

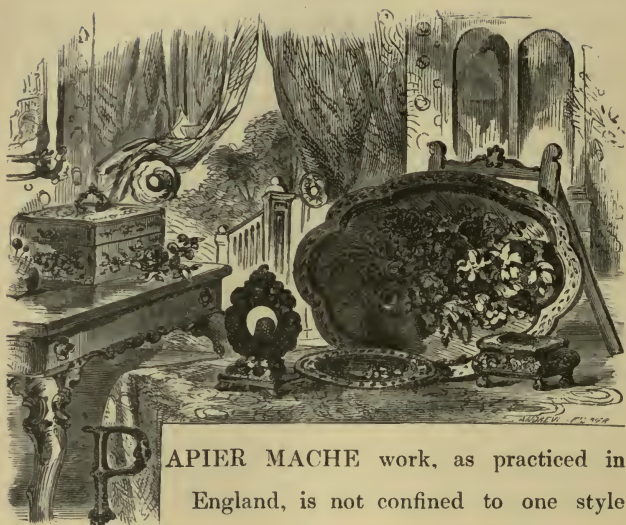


PROCURE the first quality of German or French glass, (cut quarter of an inch larger all round than the picture, to allow for framing,) and make it perfectly clean: apply with a stiff brush a very thin coat of Antique varnish,

which will be thoroughly dry in six hours. Then apply another coat of the same, thin and very equal and smooth; allow this to dry about one hour, until nearly dry, strongly adhering to the finger when touched, but not sticky. Then put on the engraving, (having damped it thoroughly with warm water, not too wet, absorbing the extra moisture with a cloth or blotting paper,) with the face to the varnish side of the glass; press it gently until every part adheres to the surface; rub carefully with the finger a part of the paper, being sure not to rub through the engraving. After it has dried twelve hours, wet again, and rub off all the paper, leaving only the engraving. When again dry, moisten carefully with fine bleached drying oil. It is then ready for painting. The colors will strike through very freely, as there is no paper left, and will not spot as the Grecian is liable to do. Do not use any turpentine in this style. The directions are the same as for Grecian painting, except more pains should be taken to shade and blend in the colors, to help the shading in the engraving, particularly the flesh color with the hair. It will be found that fine transparencies may be made as above. The glass, after it is prepared for painting, resembles ground glass.

Unmounted Photographs may be done in the same manner. Convex glasses of different sizes may be obtained which have been made expressly for this work, and there are various methods of using them, many of which are claimed to be new inventions, but the principle is the same in all, and are borrowed from our original introduction of Antique Painting on Glass. One of these methods, viz., "Chromo Photography," has been quite extensively practised all over the country.

Read what is said on page 415, "For using ordinary engravings or prints upon glass," before attempting this work.



PAPIER MACHE work, as practiced in England, is not confined to one style of painting, but combines oil, varnish, transfer, Oriental, bronze, gilding, raising, enamel, pearling, and others. We propose to treat each one under a separate head, so as to be better understood.

Papier mache painting dates its origin from the Chinese method of bronzing and gilding on lacquered ware

but has undergone so many changes and improvements, that in some branches bronze and gilding have little or nothing to do with it, and a complete change has taken place. Flower painting with varnish colors has been introduced with splendid effect ; birds, with a gorgeous array of brilliant plumage, contributing to make the style attractive. An impetus was given to papier mache manufacturers as a good remunerative trade ; the ornamental department had to keep pace with it ; superior artistic talent was called for, and in this splendid and superb work the artist had another avenue opened for his skill. A new style of bronze painting, with landscape designs, was introduced, and combination designs of landscape, flowers, and birds soon found their way to the public eye. Papier mache, (when well made,) being a compact, unyielding body, capable of being wrought by skillful workmen into a variety of useful and ornamental articles, soon found its way into general favor, until it may be said that no boudoir or drawing room is fashionably furnished without papier mache holding a perspicuous situation, to reflect the taste of the proprietor.

We do not intend to give a minute description of the

method of manufacture — it would be foreign to our purpose ; but as we are to write pretty fully concerning the ornamentation, we will give a theoretical glance at it. There are two ways of making it ; one, making it with sheets of paper ; the other, with pulp, as the name implies. To make the sheet, absorbent paper is employed, and the sheets pasted together with a paste composed of flour and glue, upon moulds of the required shape, then put into stoves, or hot rooms, as they are called, heated to about 200° Fahrenheit, or more ; when dry, they are taken from the moulds and steeped in oil, and allowed to absorb as much as they will take, and put again into the hot room ; let them remain there until perfectly dry ; then the fabric is ready to be *dressed*, as the technical term is — in other words, it is worked by cabinet makers like wood, and wrought into the required shapes ; then coated with black varnish, or varnish paint, the color desired ; hardened again in a hot room of about 150° Fahrenheit, then rubbed smooth with pumice sand and polished with rottenstone. In the other way, the paper is reduced to a pulp with water ; the water strained from it when the paper is sufficiently soft, and paste and glue mixed with it ; the pulp is then ready

to put into moulds, with great pressure, hardened, and finished off in various ways.

The flower painting on papier mache is frequently called *enamel painting*. The style of painting when acquired can as readily be painted on prepared wood, iron, tin, paper, etc., as papier mache. The colors to be used are precisely the same as those enumerated for the *Oriental*, and are mixed in the same way. To commence a painting, make a correct outline of the picture on thin white paper, rub some of your white powder all over the back of it, and trace the design on your picture with the end of one of your pencil sticks cut to a sharp point; when you have carefully traced in all the design, remove the paper, and you have your picture drawn out, transferred, as it were. Now, with your white mixed according to directions in another page, coat over *all* the flowers (retaining the shape) thinly with white, and by the time you have finished the last one the first will be dry enough for another coat. Each flower should have three coats of white to make it solid. The flowers that are intended for yellow should now be coated over once entirely with chrome yellow, and the scarlet flowers once over with the opaque scarlet; the leaves must next be penciled in with opaque green made with chrome yellow, a little white, and some Prussian blue; go over the whole with a middle tint first; then use more white and yellow, and put on some lighter tints where you wish the lights to be. For stems and fine work use the same colors. 'Transparent colors are next to be ready, and it is better in this stage of the painting to allow a day to intervene before proceeding further. Paint pink roses and geraniums with rose pink; the darker shades with crimson lake; dark red flowers with crimson lake; for darker shades, use a little blue with the crimson lake. For blue flowers

use light blue in the light shades, and finish the darker parts by adding a little of the Prussian blue; for delicate purple flowers use rose pink and a little light blue; for stronger and darker purples, use crimson lake and Prussian blue; for yellow flowers, use a pale shade of burnt sienna; for scarlet, use crimson lake in different degrees of strength; for the darker shades it will be requisite to use the full strength of the crimson lake, and for still darker add the least touch of blue; white flowers must be shaded delicately with neutral tint made of yellow lake, crimson lake, and blue, weakened very much with varnish; or another neutral is made with Vandyke brown and light blue, likewise weakened very much with varnish. The shades of all the flowers must be repeated until finished to suit the eye. The green leaves come next. They are coated over partially with transparent green made with yellow lake and Prussian blue; the shades are varied and repeated according to the tints required. If a yellowish green, the yellow lake must predominate; if a cooler and bluer green, use a little more blue; for autumnal leaves, or withered ones, use burnt sienna and a little crimson lake, and a little yellow lake if requisite. Some few darker shades will be required on some parts of the leaves, especially those that are underneath the flowers. To obtain this, use a little Vandyke brown and Prussian blue. The leaves are now ready for the veins; do these with Vandyke brown and a little crimson lake with it; the stamens to the flowers are painted in with the same color; the anthers do in with chrome yellow, and dot them with burnt sienna; the green leaves are finished by touching the veins with a faint outline, here and there, with chrome yellow against the veins already on. The flowers are all finished with this exception; some of them, especially the pink ones, may want a slight tinge of neutral (very pale) just against the edges, to soften them a little; and a little white,

weakened with varnish, may be used to advantage just at the edges of flowers; it materially helps to break any little abruptness or harshness.

The painting is now finished, and should remain a week or more to dry before varnishing. The two sized brushes used for this kind of painting are a crow quill with the hair about five eighths of an inch long, and a duck quill about half an inch long.

To succeed well in *Enamel painting*, we would advise the pupil to practice with the brush and indian ink, the following figures.



In making the first figure, you press the brush on your paper, draw it along a little gradually, decreasing the pressure until it terminates in a fine point; a few pages should be carefully made

of *that one figure*. The second is produced in the same manner, with one inclining to the right and one to the left; make at least a page of these. The third figure is made of the same marks repeated, and brought close to each other. The fourth is the



same. The fifth is the third and fourth combined, and is the way to form leaves. The sixth commences with the brush just touching, then gradually pressing down a little, and tapering off again with light pressure. The seventh is the same but very small. These figures, when well practiced, greatly facilitate the free ma-

nipulation of all the first coating of Enamel painting. They can be practiced with India ink, or any common paints, as the object is simply to train the hand. The brush should be held nearly upright; by so doing you have more command than when it is at an angle suitable for writing. A variety of forms will suggest themselves to the artist.

BRONZING.



TO prepare paper board for bronzing: Coat it over with a strong solution of size made by dissolving isinglass in hot water; strain it, and coat over the paper with a flat camel's hair brush while the size is warm.

When it is dry, coat it over thinly and evenly with gold size; let it remain until it feels

sticky; then apply the powder bronze with a dry, soft brush.

To bronze metal plates, papier mache, and prepared wood boards: Have a smooth surface, coat it evenly, thoroughly, and thinly with gold size, using a flat camel's hair brush, (be sure it is clean and free from dust,) and be careful to cover every part. Allow it to dry until it feels sticky; then apply the bronzes with a soft and dry camel's hair brush. When you have covered it with bronze, by warming the article, and applying more bronze while it is warm, the bronze can be made much more solid, as warming brings back the sticky property of the gold size, and causes more bronze to adhere to it.

BRONZE PAINTING.



PROCEED to bronze according to the directions under the head of Bronzing, only you can introduce a variety of shades of bronze, if you wish. We invariably use three, if not more, viz., pale, blush, and white. Blend them together to suit your subject, and allow a couple of days to elapse before commencing to paint, so

that it may dry. We will suppose it is a landscape, with mountains in the distance, water mid-distance, and foliage and building and figures in the foreground. Make a correct drawing of what you want, on thin white paper, rub some white on the back of it, fit it upon your picture, and mark over with the sharp end of a pencil stick, pressing on very lightly; after all is drawn in, remove your sketch, and faintly mark over the lines with a lead pencil. If you are copying from an engraving, observe on what part of the building the light strikes, and select those parts for gold, coating them over with gold size, and putting on the leaf gold when sufficiently dry, (according to the directions already given.) If there are any parts of your figure (such as rich dresses) which you want rich color, do them at the same time with gold. The painting must now be wiped with a clean silk handkerchief, to remove all the bits of gold and dust; and supposing that the thimble palette is ready, with all the colors mixed, according to the directions previously given, we first mix a pale tint of purple, made with Prussian blue and a little crimson lake, and pencil over the moun-

tains evenly, then go over the water with a very pale shade of blue. After coating the mountains and water once, it is better not to touch them again until they are dry. Now paint in the foliage, making the tints with yellow lake and Prussian blue; if you want them bright, for the different shades add burnt sienna, or Vandyke brown, or both, as your tints require. Stems of trees are mostly done with Vandyke brown, and other tints added to suit the eye; faces of figures do with white and a little sienna mixed together; white drapery coat over with white, scarlet with scarlet, and yellow with chrome yellow; all other parts of figures with white, except the parts you have already gilded. This will suffice for the first painting. The second shade upon the mountains is made with a neutral composed of the three primitive colors, viz., crimson lake, yellow lake, and Prussian blue. The *tone* that you desire must predominate in making all your neutrals; for instance, if you want a bluish neutral, the blue must predominate; if you want a greenish, the yellow lake must predominate; and if reddish neutral, let the crimson lake predominate. Having selected your shade, be sure to have it about the right strength before beginning, as it is difficult to avoid a patched appearance on the mountains with varnish color, especially on the second and third coating, unless you are quick in your movements. If the water requires more color, paint it in the darker places, then repeat the shades on the foliage where it is requisite. Your figures now claim some attention. Any part you want crimson, paint over gold with crimson lake, and you have a splendid color; repeat it when a little dry, if you wish it darker, and for the shades add a little blue with your crimson lake. Blue dresses paint with a pale shade of Prussian blue on white or pale gold; for the shades, paint in with a little stronger Prussian blue. (Please bear in mind, when you wish a pale shade of any of these

colors, especially mountains, to add varnish; and when you want to thin it, use turpentine. We call attention to this, because it is rather difficult to manage varnish colors at first, owing to their drying up so rapidly; but by a little practice you soon find out that if worked with proper consistency the process is not difficult.) Green dress, with yellow lake and Prussian blue on pale gold or white; purple dresses, with crimson lake and a little Prussian blue on white or pale gold. Any part of the figure you do with scarlet, shade it with crimson lake; yellows shade with burnt sienna, pale shade. Faces: paint the features in with Vandyke brown, and different tints with yellow lake, crimson lake, and sienna, paled down, and repeated to suit the eye. Parts of the mountains may require a third and fourth wash; if so, attend to them with the neutrals named above. Sometimes we lighten the effect of the near foliage by touching the edges with a little opaque color made of chrome yellow, white, and a little blue. It must be done very carefully, as opaque colors are powerful, compared with transparent ones. If what you do shows too abruptly, you have a remedy by putting on a little more of the transparent color. Parts of the figures may be lightened by a touch here and there of opaque color, and the faces are almost sure to want a little retouching with opaque. When your painting is all finished, a full week should intervene before varnishing; and great care must be observed not to touch the bronze, as the hand or fingers invariably leave a stain, bronze being so delicate.

VARNISHING. — In varnishing papier mache paintings, care must be taken to have a clean brush, and your painting must be wiped with a silk handkerchief to free it from dust. Lay the painting flat, and with a one-inch flat camel's hair brush coat over with copal varnish as evenly as possible, being careful to cover every part; leave it flat down, as it is, for a couple of hours or more,

before removing, or the varnish is liable to run in streaks. Once varnishing is quite sufficient to preserve the painting; but if you wish to polish it, another coat of varnish must be given, allowing a week between; then after another week, it should be rubbed with pumice sand and water, in the following manner:—

How to POLISH. — Get a piece of woolen, put it over some cotton, to make a rubber of it; wet the rubber with water pretty thoroughly, dip it into some fine pumice sand, and rub it backwards and forwards on your varnished picture carefully with a moderate pressure. After you have rubbed a short time, wipe the sand from a part of it, to see the progress. If not sufficiently smooth, rub a little more, care being taken not to rub through the varnish, or you will rub the paint. When it is pretty smooth, wash all the sand off, wipe it perfectly dry, and give it another coat of varnish, allowing the same time for it to dry; then rub again as before with water and pumice sand. When smooth enough, wash off all the sand, and proceed to polish with very finely powdered rottenstone, and a rubber made of soft satin or silk. Saturate this with water, and rub with the rottenstone for a little time, until it shines; then wash it all off. You can make it shine more by rubbing it with your hand, using a few touches of sweet oil and a little more rottenstone.

How to PREPARE WOOD. — When wood is used for painting any of the papier mache styles, it is better to choose the closest grain, and proceed to coat it over several times with paint (either oil paint or varnish paint), rubbing down with pumice sand and water after the third coat. The number of coats taken to prepare varies according to the texture of the wood, as it is necessary to coat it over until it is perfectly smooth and level. Proper time should be allowed between each coat of paint, so that it may dry hard.

Enamel painting looks very well painted on a bronze ground, and suits admirably for tables, chairs, and other furniture.

Glass vases have a rich effect bronzed all over or partially; perhaps an oval or a round, front and back; and if you wish to paint upon it, proceed exactly in the same way as directed for enamel painting or bronze painting.

CHINESE RAISING. — Trace the design in the same way as in the directions for tracing designs for enamel painting. The raising composition is made of two parts of white lead, one part of litharge, and one part of umber, and mixed with gold size and a little varnish, into a paste, and thinned with turpentine. Put on your raising, when mixed, with a small brush, being careful to float it on evenly. When you have raised all the parts you wish in your design, let it remain flat till the next day. Repeat the same until you get the parts raised as high as you wish. When all the raising is done, three or four days should be allowed for it to dry and harden, (a moderate heat of the fire will facilitate the drying;) coat over the raised parts with gold size, and proceed with the gilding according to the directions for gilding. Two sorts of leaf gold are generally introduced — pale and dark — so the picture will require two separate sizings; next, size with clear gold size all the ground and mountains, (supposing your subject to be a regular Chinese design,) and when dry enough, shade on some powdered bronze with a dry brush. Fine leaves and small trees can be introduced with opaque green made with chrome yellow and Prussian blue, and little flowers painted in with white and stained with red, blue, or yellow. The gold can be etched with black and shaded a little with neutral black. The bronze ground stain with transparent green and a little sienna; afterward introduce a few gold spangles, (put them on with varnish;) this makes the ground look sparkling, and adds greatly to the finish of it.

When quite finished, let it dry a week before varnishing: there is no occasion to varnish all over your picture, but only the part that is painted.

PEARLING. — Prepare the design, marking all the parts you wish to have pearl. Trace the design upon the article, — we will suppose it to be a small table, — same as tracing for enamel, before explained. Remove your drawing, and place on all your pearl. See how it looks. If satisfactory, get some *spirit* varnish and a small camel's hair brush. Remove one piece of pearl at a time, put some of the varnish in the place with the small brush, and fit on the pearl, pressing it down so as to lie flat. Go through with all the pearl in the same way; some of the large pieces may want a weight put on to keep them flat. Next day give it a coat all over with black varnish made with the spirit varnish and lampblack. Repeat the coat (a flat camel's hair brush is best for varnishing) twice a day for the first three or four days. When the pearl seems pretty nearly even with the black, scrape all the black off the pearl by means of a chisel or knife, being careful not to remove any of the black any where else by letting the knife or chisel slip. When all is scraped off, you can commence coating it over again. This time add a little Prussian blue with your black varnish: it makes a more brilliant black. (The proportions are, to one pint of spirit varnish add one and a half ounces of lampblack and half an ounce of Prussian blue.) Coat it three or four times over if it requires it; then scrape off the black from the pearl again. If it seems pretty level, we will proceed with the next process; (if not, coat again as before, and scrape.) Get some stout broadcloth, and make a good substantial rubber by stuffing in some soft cotton; tie it round, so that you can handle it conveniently; put some turpentine in a saucer with some pumice sand, and charge your rubber well with this, and rub away till you get a smooth surface all over.

When smooth enough, wash the sand all off with turpentine; then rub it with rottenstone and water, using this time a rubber made of silk or satin; this rids it of all sticky property that remains from the turpentine rubbing. You have now got through the troublesome part of it; getting rid of every thing in the shape of black varnish specks, you are ready for the next step. If you wish to have some leaf gold introduced, make your selection of what you will have, and prepare a little gold size by mixing in a little chrome yellow, so as to enable you to see better what you are about. Coat over the leaves or stems, or both, with the gold size, and proceed with the gilding according to the directions for gilding. If any more flowers are in your group than what are pearl, it is requisite to coat them over with white, proceeding exactly in the same way as in the directions laid down under the head of Enamel Painting. The pearl flowers you shade with their respective colors, so as not to cover up too much pearl. For instance, if you want to shade a rose, do it with crimson lake on the shade side of the flower, leaving the pure pearl to answer for the lights. When your painting is all finished, you allow sufficient time for it to dry, and proceed with the varnishing precisely as in enamel work and bronzing.

GILDING ON SATIN, PAPER, CLOTH, LIGHT-COLORED, UNPREPARED WOODS, ETC. — Sometimes gilding is required upon only small parts of articles. In such cases use strong isinglass solution, made according to the directions written before — the purer the better. Take a small camel's hair brush, and coat over with the isinglass size, while it is warm, the places you wish to gild. When dry, proceed with your gold size, same as the gold size gilding. The reason of applying the isinglass size is to satisfy the porous nature of the fabric, and make a delicate kind of crust as a foundation for the gold size. If you wish to paint flags and banners with oil paint, you must coat over the parts first with isinglass size.

GILDING.



ANY part you wish to have leaf gold it is requisite to cover evenly with gold size, (a little chrome yellow or white lead may be mixed in with the gold size merely to enable you to see the process,) and allow it to dry until it feels a little sticky; it can remain much longer than for bronzing, as leaf gold does not require so strong a sticky property as bronze. When sufficiently dry, put on the gold by means of the tip, as described in glass gilding; or, if you are expert enough, put it on with your fingers from the gold book. Be careful to cover every part of the gold size with *smooth* leaf gold, and when all covered, press gently with a piece of soft chamois leather on all the gilded parts, and remove the superfluous gold. If these directions are strictly followed, you can not fail to have good smooth gilding; but if the gold size is put on thick and uneven, and the leaf gold put on too soon, the gold will look rough and dark, and be very unsatisfactory to the eye when you get more experienced.



OIL PAINTING.*

ANY one can paint in oil-colors who has previously practised the instructions giving in our chapters on drawing in pencil, charcoal, crayon, etc.

Those who have any previous knowledge of mixing color, even though it be water-color, will find the mixing of tints in oil easier for them, as a good many of the same colors combined will produce the same result. As for instance, yellow and blue, green; blue and red, purple: etc. The materials required for oil painting are oil-

* The oil-colors made by F. W. Devoe & Co., New York, are recommended by many of the leading artists of this country.

colors* in tubes, brushes, palette, a palette-knife for rubbing the colors together on the palette, and drying-oil. The drying-oil is for diluting or thinning the colors, and will also hasten the drying so that the subject will be sooner ready for the second painting.

The smallest box contains all the colors necessary for a beginner. But crimson lake and chrome are not as good colors as madder, lake, and cadmium. These two former are much cheaper colors, and perfectly good substitutes for a beginner. To those who are more advanced the publishers will send the more expensive colors to replace crimson lake and chrome on receipt of difference of price when desired to do so. These boxes include enough brushes for all ordinary purposes, but those requiring more brushes can easily obtain them from the publisher of this book.

Each artist, either from inclination or habit, becomes accustomed to using a certain set of colors, that is, a certain palette. The colors in these boxes are selected as those which are found in common upon the greatest number of palettes. Those who wish separate tubes of colors can obtain them from the publishers of this book.

* The publishers of this book furnish boxes of oil-colors from \$2.00 upwards. See chapter on materials.

After painting you must be careful to wash your brushes. The best way of proceeding is, after you have done painting, wash them out in turpentine, and occasionally in warm water and soap, rubbing on the palm of the hand until the froth is colorless. Rinse the brushes out in clean, cold water to free them from soap, press all the water out, and straighten the hairs to dry. In rubbing the brushes in your hand, be careful not to rub too hard, or the hairs will be injured.

Artists differ somewhat in the compound used as a drying-oil, and some of them make their own, in which case they are rather disposed to imagine it a little superior to anything else in use; that which may be found at any first-class artist material store will answer every purpose.

In oil painting, as in water-color painting, there are several kinds of manipulation peculiar to the different styles. Water-color has its own treatment of erasing, rubbing, and wiping out, etc., while oil painting glories in glazing, scumbling, dragging, etc. Different artists have different methods of manipulation to produce the same effect, and yet each is truthful to nature.

EXPLANATION OF TECHNICAL TERMS USED IN OIL PAINTING. *Glazing*.—To glaze is to coat thinly or

thickly over a portion of the picture with transparent color; if the glaze is wanted thin and pale, drying-oil is added to dilute the strength of the color. Semi-transparent and opaque colors are sometimes used for glazing, but they are so diluted with megilp or oil, that they are rendered nearly transparent. With opaque colors used in this way a good representation of smoke, dust, or vapor can be produced, likewise misty and hazy appearances. Glazing must never be attempted until the under paint is perfectly dry, or the color will mix with the glaze, and destroy all the effect you have secured.

Scumbling is a term used for *reducing* any part of a picture that is too forcibly painted. A bristle brush is best adapted for this purpose, charged sparingly with *opaque* color, of the tone you wish, drawing it lightly over the parts, so as to modify them, make them cooler, grayer, and less defined. Good distant atmospheric effects are produced by scumbling; the under color must in all cases be firm and dry, or the bristle brush will disturb it.

Handling is another term for manipulation, and means the method of working the brush to produce certain effects.

Dragging or Dry Touching.—This process is used when certain effects are wanted in the finishing. The

brush, being charged with thick paint, is held loosely in the hand, and dragged over certain parts; a portion of the color sticks to the part of the picture with which the hair thus gently comes in contact.

Management of Light.—When painting at the easel, the light should come over the left shoulder; if the light is from a side window, cover the lower part with a cloth or board. A north light is preferable to any other, because it is more uniform. After painting, the brushes should be washed, the palette well cleaned, never leaving paint on it over night. If there be more color on your palette than you like to throw away, procure some small pieces of glass, three or four inches square; transfer the paint to these, and place them in a dish of clean water so that the water will cover them (oil and water will not mix): most of the colors will keep good for a considerable time, if immersed in water and the dust kept from them,

HOW TO COMMENCE AN OIL PICTURE.—If you are sufficiently accurate in sketching, you can with charcoal, or white crayon, make a few guiding marks; then mark in correctly with lead pencil, dusting off the crayon or charcoal as you proceed. If the subject is complicated,

the better way is to make a clear, correct outline on a sheet of paper, and trace it on the canvas by means of tracing paper; then sketch it with a lead pencil. Some artists sketch with umber, diluted with oil. The canvas is now ready for the first coloring. Begin by preparing tints for the sky. As white enters into this preparation pretty extensively it is requisite to get sufficient from the tube at once, and thin it with oil, as it is considerably too thick for use in this stage of the painting. Sky tints are composed of white, French or permanent blue, vermilion,* and yellow ochre. Mix them as near the tints as the subject demands. The same tints strengthened with more color, will do for the mountains, using a little more of the yellow ochre in the mid-distance, and working gradually toward the foreground, for which mix a set of requisite tints, keeping them all separate, and painting with firmness, placing the color at once where it is to remain. In some paintings, two, three, or more sittings are requisite to complete what is called the first painting.

SECOND PAINTING.—It is requisite for the first painting to be dry before commencing the second. Prepare the palette with the required tints for the clouds, and

paint them in with a little more attention to the shape, and light and shade. The mountains come next in order: attend more particularly to their shapes and different shades; and, as a general rule, let the early painting be of a light style of color, for in finishing the colors are cooled down by the process of glazing and scumbling. All the colors in drying sink, and will partake a little of the color upon which they are laid. This second painting should give a good idea of the general effect of what the picture will be.

THIRD PAINTING. — A few touches of scumbling may be required to aid the effect of the distance; or a little glazing and scumbling may be wanted, to bring out certain desirable effects in the middle ground. The tints used for these purposes may be, as occasion requires, either brighter or darker than the parts to which they are applied. In this stage of the painting, do not attempt too much at one sitting, as the different glazings may interfere with each other, and destroy the transparent effect. It is much better to let the colors dry gradually, and repeat the glazing at another time.

OBSERVATIONS. — 1st. The sky in some pictures is very important, having an influence over the entire

painting. In preparing sky tints, they are gradually more or less mixed with white. The tints are kept lighter as they approach the sun; the colors vary, but they should be produced by few. The most useful sky colors are white, French or permanent blue, vermilion, madder or crimson lake, and yellow ochre.

2d. The boundary sky line, or extreme distance, varies very much in tone; sometimes distinctly seen, at others scarcely distinguished from the horizontal tones. Suitable colors must be selected to paint in these effects. Distant mountains will sometimes have their summits quite visible, and their bases, although much nearer, not seen; this is occasioned by mists and vapors. To obtain such effect, scumbling must be resorted to.

3d. If it be possible, paint in the distance while the sky is moist, with the same tints, only stronger, as the case may be. If time will not allow, scumble over the lower part of the sky at the next painting. This method is sometimes attended with better effect than the other.

4th. As the objects advance toward the foreground, a little more distinctness of color may be given. Accidental touches of light give important aid by separating the foliage, and different objects through the picture, from

distance to foreground. Emerald green may be objected to by some artists; to such we would recommend to try with vermilion or one of the bright reds, and judge for themselves.

5th. Trees form an important item in general landscape. The color and shape should be attended to, and the disposition of the branches carefully studied. Pencil in the foliage against the sky, and all the extreme parts, neatly with a small brush.

6th. In working up foregrounds, do not elaborate them with a pre-Raphaelite minuteness, or it might interfere with the rest of the picture. The landscape is not intended to be painted with botanical accuracy; nor, on the other hand, should you be too broad, coarse, and careless, but finish with a general harmonious keeping of the whole.

7th. The distance must, to a certain degree, melt into the horizon, so as to know where ethereal finishes, and where solidity begins; the mid-distance should be made out more clearly, and particular attention should be paid to the details of the foreground.

(Mixed tints, see page 386.)



GRECIAN PAINTING.

THIS STYLE OF PAINTING consists in painting with oil colors* on the back of an engraving first rendered transparent by means of a certain fluid called Grecian Varnish. It is so simple of execution that it requires no previous knowledge of colors, and the result produced is not only effective, but quite artistic. For a beginner all the colors necessary for this style of painting will be found in the boxes of oil colors sold by the publishers of this book.

* The oil colors made by F. W. Devoe & Co., are used for this style of painting.

We now give directions.

First have a pine frame made, about an inch in thickness and about half an inch wide, the inside of which shall fit neatly around the edge of the engraving. Then lay your frame upon the engraving and draw with a pencil upon the engraving around the outer edge of the frame, and then cut the picture down to that pencil line.

Cover one side of your frame with strong paste, lay your picture face down upon a clean piece of white paper, soak your picture thoroughly with a sponge wet with clean water, lay your frame upon the picture the printed side down, and press it firmly down, then turn it over and press it softly with your hand to be sure that it adheres firmly all round; then leave it until it becomes quite dry.

When dry, put on your Grecian varnish, rubbing it in with a bristle brush. Repeat this at intervals of ten or fifteen minutes as many as four or five times. The varnishing must be repeated until the picture is completely transparent, and has no dull spots in it. Lay it away out of the dust to dry for a week or so, when it will be ready for painting.

Care must be given to the pasting, that it may be perfectly secure. It is a good plan to keep a damp piece of

paper over the middle of the picture, to keep it damp until the edges have sufficiently adhered to resist the contraction of the paper; for while it is moist it will hang loosely, but when it dries it will shrink, drawing tightly across the frame. Sometimes, after the picture has been varnished and dried, white spots make their appearance upon it. If the spots come out in the course of a day or two after varnishing, coat over the back of the picture with turpentine, and let it remain there half an hour. If the spots have not disappeared then, go over it again in the same way, and they will ultimately disappear if you are persistent.

When the last coating of turpentine has all evaporated, or nearly so, put on another good coat of varnish and then leave it to dry; the spots will probably never come back again. In cases where a picture thus made transparent has lain unpainted several months, and white spots then appear on it, it will be more difficult to remove them. The best way then is to place the picture near the fire, where it will become slightly warm. Then put on the turpentine, which softens the varnish more quickly with the aid of the heat, and then the next coat of varnish will be enabled to penetrate the paper. The cause of

these spots is that an insufficient amount of varnish has been applied to the picture, and the places where the spots appear have not absorbed enough to become thoroughly saturated with it. While applying the varnish you must watch the picture carefully, and wherever a dull spot appears put on more varnish, for these dull spots are what ultimately result in white spots. But you must be careful not to apply too much varnish, as it will (above all, in hot weather) remain gummy, and the colors will float off when it is painted.

If a white spot should appear, as sometimes happens, sometime after a picture has been painted, the only way of remedying it is to stipple it over on the face of the picture with opaque color exactly to match the color of the part affected.

Stippling consists in making very fine dots, like pin-points, close together upon the surface, with the point of a camels' hair brush dipped in color.

The reader must understand that the colors cannot be laid on too brightly on the back, as they only partially show through, which renders them quite dull from the front.

HOW TO FRAME A PICTURE AFTER IT IS PAINTED. —
Let it remain in the frame in which it is first stretched till

it is fully dry and hard; then cut it out carefully and frame, taking care that it be not cut too small or too large. If too small, the back board will not hold it in well; if too large, it touches against the sides in parts, and causes it to wrinkle.

To have it just right, lay it upon a flat surface and the frame on it, and mark the size with a sharp point, and then cut evenly. If, after all your care, it should wrinkle in time, take it out of the frame and make another stretcher or frame of wood (as first directed, to stretch the picture on, only stronger, perhaps), that will just fit your gilt frame; then take a piece of strong cotton cloth, one or two inches larger than the picture all round, and paste the back of the picture and the cloth; after pasting let both stand a few minutes to become pliable, then lay the one on the other, pasted sides together, and rub evenly till well fastened; now tack with small nails or lace tacks tightly to the frame; place the frame against some smooth surface, and secure it, while drying, with larger nails driven through the frame, after making suitable holes. It will dry smooth and tight if properly done.

Varnish the picture *but once* on the face, after it is framed (not before), with outside varnish; this must be put on

evenly, and with care, that it does not run; have but little in the brush at a time.

ARTICLES DESIRABLE FOR GRECIAN PAINTING.— Palette, palette knife, one inch flat bristle brush, one inch flat varnish brush, (we use two different brushes;* one we keep entirely for the Grecian varnish, the other for varnishing over the front with mastic varnish when finished,) three sized sable brushes, (one miniature size.) Grecian varnish, mastic varnish, (or outside varnish,) spirits of turpentine, drying oil. — *Colors.* Flake white, light red, vermilion, crimson lake, Vandyke brown, raw and burnt sienna, chrome yellow, yellow ochre, ivory black, emerald green, and permanent blue.

We will give a few general hints for mixing various tints, without reference to any particular picture. They will always be found useful. *Flesh tints*, white, a little chrome and a little vermilion; sometimes for children, white and a very little vermilion; for old age, (weather-beaten,) light red and white. *Light hair*, yellow ochre and white; these two colors will give all the shades of light and dark brown hair. *Flaxen hair*, raw sienna and

* These brushes are not included in our boxes, but may be obtained from the publishers of this book:

white. *Golden hair*, raw sienna, white, and a little burnt sienna. *Distant mountains*, permanent blue, white, a little chrome, and light red. *Nearer ones*, use yellow ochre instead of white and chrome. *Mid-distances*, the same, sometimes allowing the yellow ochre and blue to predominate. *Distant foliage*, yellow ochre, permanent blue, and a little light red. *Near foliage*, chrome and permanent blue, with a little white; very bright foliage, emerald green, chrome yellow, and a little white. *Brown foliage*, burnt sienna, chrome, and permanent blue; Vandyke brown, substituted for burnt sienna, will make another. *Grays*, white and a little ivory black; another, white, chrome yellow, permanent blue, and a little vermilion. *Pink*, crimson lake, and white; for *crimson*, vermilion; for *deep maroon*, use light red. *Buff*, white and yellow ochre; *warmer buff*, white and a little raw sienna. *Orange*, chrome yellow and vermilion. *Blue eyes*, permanent blue and white. While these tints are all for the *back of the picture*, the *front* is treated differently. Any part that is required to be brighter must be glazed over with transparent color; for instance, a *bright red garment* or *flower* is coated with vermilion on the back side, and crimson lake, diluted with a little drying-oil, on the right side. *Pink, dress* or *flower*, paint with crimson lake and white, on the

wrong side, and glaze over on the front with crimson lake. *Blue dresses* or *flowers*, paint on the back with permanent blue and white, and finish on the front with blue and drying-oil. *All dresses* or *flowers*, of the yellow class, are finished on the front with burnt sienna, weakened with drying-oil. *Brown hair*, with Vandyke brown. *Lips*, with vermilion and white on the wrong side, and vermilion and drying-oil on the right. For *purple*, mix vermilion, permanent blue, and white, for the back color, and finish on the front with crimson lake and blue.

OBSERVATIONS. — 1st. All colors used for the back of the picture must be opaque; the opaque colors used are, white, black, chromes, light red, vermilion. The transparent colors are, both siennas, crimson lake, permanent blue, Vandyke brown. As a general rule, the *transparent* color that is mixed with white for the back color, is the transparent color that must be used for the front, diluted with drying-oil, to suit the required strength of tint; this stands good in all cases, except yellows; these various shades of yellow we invariably tint on the front with burnt sienna and drying oil.

2d. In tinting on the front side, dilute the color with drying-oil, using it very sparingly. If we wish to heighten

any part still more, we use a touch of opaque very sparingly; for instance, if we want a reddish brown dress inclining to a deep crimson, we coat the back with fine light red, and the front with crimson lake; and if we wish to bring out a few high lights, we add a little of the light red; if too strong, subdue it with some drying-oil.

3d. In painting faces, paint a spot of pure vermilion on the cheeks, and the rest of the face (omitting the eyes and lips) with flesh tint; then, with the end of your finger, blend in the vermilion (working your finger round) with the flesh tint; this must be done carefully. Look occasionally on the front side, to see if the tints are blending evenly, and in the right place of the cheek; if this part is done satisfactorily, the beautiful roseate tinge on the cheek is made much softer than in any other way. Foliage tints, mountains, and clouds can be manipulated in the same way.

4th. Water is generally the reflected color of the sky, unless something intervenes to overshadow it; in that case, make the back tint with permanent blue, Vandyke brown, and a little yellow ochre; glaze with yellow ochre, Vandyke brown on the front. If any light ripples are introduced, use chrome and white very sparingly with the same.

5th. Sometimes, when painting on the back, the color, after standing a day or so, separates into small fissures or cracks. This is caused by the varnish not being thoroughly dry; it is of no consequence, and is only mentioned here to satisfy the fears of some. To remedy it, coat it over again at a later stage of the painting, when it is drier.

When the painting is entirely finished, let it remain a week or so, till thoroughly dry; then give it an even coat of mastic or outside varnish; let the painting lie flat down until the varnish is quite dry, or it is liable to run in streaks. The picture is then ready for framing, and should be allowed to remain on the stretching frame, as it keeps smooth and firm. The rabbet of the frame should be made wide enough to admit the full size of your picture, stretching frame included.

GRECIAN PAINTING APPLIED TO PHOTO- GRAPHS.

THE method of painting which we have just given as Grecian Painting may also be applied to unmounted photographs. For the benefit of those of our readers who may not be acquainted with the subject, we will say that photo-

graphs are printed on quite thin albumenized paper, and afterwards mounted or pasted on thick cards, in which form they are usually delivered by the photographer, although they may be had unmounted. This paper is made especially for printing photographs upon, and is so hard and firm that it may be washed and soaked in water for hours at a time without injury to it, so that a photograph may be mounted and soaked off any reasonable number of times. Directions for mounting will be found in the chapter on "Amateur Photography," page 325. For soaking off immerse the subject in a vessel of clean water and let it remain until it is sufficiently softened to allow of the separation; it may require from half an hour to an hour's time. Then wash it carefully until all of the paste has been removed, when it may be allowed to dry.

The next stage in the proceedings will be to prepare the subject for clearing. As photographs do not usually have sufficient margin to allow of the same treatment, for which directions have been given in the chapter on Grecian Painting, it will be necessary to enlarge them; this can be done by the addition of a border, for which procure a piece of strong stout paper, somewhat larger than the photograph,

say two inches all around, make a frame of this by cutting out the centre so that the opening will be a little smaller than the photograph for which it is to form the border, viz., if the photograph measures 4 x 6 inches, make the opening $3\frac{3}{4} \times 5\frac{3}{4}$; this will allow a space of $\frac{1}{8}$ of an inch all around to which it (the paper border), should be fastened with paste to the photograph. In fastening them together apply paste to the border only, then dampen the photograph sufficiently to cause it to lay flat when it is placed on the paper border, and be careful to see that it is securely attached entirely around; hold it in place with some pressure until dry, a flat board with a weight on it will be all that is necessary, after it has thoroughly dried it can be attached to a wooden frame in precisely the same manner which has been described in the chapter on Grecian Painting, except that in sponging the paper, it will only be necessary to sponge the border, being careful not to wet any of the portion which has been pasted. After this follow the directions given in the chapters on Grecian Painting, omitting the turpentine. A photograph can be more easily cleared than an engraving, and will be more transparent.*

* The Devoe colors will be found admirable for this work.

PAINTING PHOTOGRAPHS IN OIL-COLORS.

THE following chapter on Painting Photographs in Oil-colors* is given as it has appeared in former editions of this book. "Artist Colors and How to Mix Them" will inform the reader how to make from our boxes all of the colors which will be needed for the work.

How to Prepare the Photograph.—Get some size, and melt it in a dish over a slow fire; when it is dissolved, strain it through flannel into a soup-plate, and immerse the photograph in it. When it is sufficiently saturated with the size, take it out and let it dry, then paste it down on card-board, and it is ready for use. Another method: Dip a flat camel-hair tool into the size, and go

* The oil-colors made by F. W. Devoe & Co., are especially recommended.

over both sides of the photograph. If it be insufficiently prepared, the colors will sink in those parts where there is a paucity of size, and you must give it another coat.

Oil Colors. — The following is a table of tints in very general use with artists; but it must, however, be clearly understood that they are capable of many modifications to meet almost every variety of color observable in nature. Portraits of ladies, but children more especially, require the tints for the first and subsequent paintings to be kept exceedingly delicate and pearly; for the adult male head the colors must be more powerful.

TABLE OF TINTS FOR THE FIRST PAINTING.

FLESH.

White and Light Red.	<i>Deep Shades.</i>
White, Naples Yellow, and Vermilion.	Light Red and Raw Umber.
White and Naples Yellow.	Indian Red, Lake, and Black.
White, Vermilion, and Light Red.	<i>Carnations.</i>
<i>Gray, Pearly, and Half Tints.</i>	White and Indian Red, (powerful color.)
White, Vermilion, and Black.	White and Rose Madder.
White and Terre Verte.	White and Lake.
White, Black, Indian Red, and Raw Umber.	

HAIR.

Light Hair.

White and Yellow Ocher.

White and Roman Ocher.

White and Vandyke Brown, for
the dark parts.

White and Raw Umber for the
dark parts.

Dark Brown Hair.

Raw and Burnt Umber.

White and Raw Umber.

White, Vandyke Brown.

First Painting. — Lay out the palette in the following order: Place the lightest flesh tints nearest the right hand; next in succession those having more color in them; then the middle and shade tints; and lastly, the pure colors. Use megilp* as a vehicle, if you wish to paint thinly, and add a little turpentine to it.

Begin by laying on the high lights, gradually descending into the more florid parts, till you arrive at the middle tones, which in their turn descend into the shadows. Lay the color on the lights of some consistency, but let the shadows be thin.

Be careful not to work the lights about with your brush, but lay them on boldly and full. Put in a gray tint for the white of the eye, and paint the iris and pupil upon it. Take a warm shade color, and mark out the features, and lay in the lips with a tint considerably

* Megilp is composed of drying oil and mastic varnish; stir gently together till they incorporate, and let the mixture remain until it becomes thick.

under nature ; indeed, it is necessary to force up the whole of the coloring to allow for it sinking in drying. Proceed to the hair and eyebrows, lay in the shades, and after them the lights, define the draperies in the like way, and rub in the background, beginning with the lightest part. When you have got on thus far, take a softener — a badger's hair tool — and go gently over the whole of the face to round it, and make the various tints blend into, and unite with, each other.

Second Painting. — Having allowed the picture ten or twelve hours to dry, the next operation will be preparing it for the second painting.

Take a sponge * moderately charged with water, and go gently over all the work ; when it is dry, dip a brush in poppy oil, and again go over the surface ; then wipe off the superfluous oil with a piece of soft silk as gently as you applied it. This is termed “oiling out,” and is done that the subsequent paintings may unite with the first. Nevertheless, it is frequently omitted ; but washing with the sponge cannot be dispensed with, for without it, the glazes will not lie, but curdle on the picture.

* Breathe upon the surface of the picture. If it becomes dull or misty, you may safely use the sponge ; but if the breath does not affect it, do not go on — it is not dry enough.

TABLE OF TINTS FOR THE SECOND AND THIRD PAINTING.*

High Lights. — White and Naples yellow.

Carnations. — Rose madder and white. Indian red, rose madder, and white.

Green Tints. — White and ultramarine with any of the yellows. White and terre verte, with the addition of a little raw umber. The above green tints may be converted into green grays.

Gray Tints. — Ultramarine, light red, and white. Indian red, lake, black, and white. White, ultramarine, Indian red, and raw umber.

Purple Tints. — Any of the lakes, or red madders, with ultramarine and white.

Powerful Shadow Tints. — Indian red, purple lake, and black. Indian red, raw umber, and black.

Strong Glazing Colors. — Light red and lake. Brown madder. Vandyke brown, Indian red, and lake asphaltum.

Proceed now to improve the lights, yellows, and florid tones, with tints that approach your model; then glaze the shadows where they are wanting in depth and color.

The alterations, which at this stage are necessary, should be made with the shade tint, your own judgment guiding you to the requisite depth of color for that purpose. Look carefully over all the photograph,

* These and the following tints might be increased almost *ad infinitum*; but it is better to present only a few to the learner, as a great number would only serve to bewilder him.

and put in some of the spirited touches about the eyes, mouth, etc. Then improve the gray and pearly tints, (those about the mouth and eyes require very delicate handling,) and blend them into their proximate colors with a softener. Next look to the reflexes, which are to be painted, if possible, without any white in them. Soften the outline of the head with the background, so as to take off every appearance of hardness, remembering that there should be no such thing as a sharp outline in the face; a glance at a plain photograph will at once show this to you. The lines of the eyes, mouth, and nostrils must also be carefully blended; but they must not be rendered too soft, or they will impart an air of insipidity to the countenance.

Third Painting. — Having proceeded thus far, it will be necessary to sponge the picture again. Scumble over the lights again where necessary, improve still further the luminous tints, and look to the glazing and reflexes. In finishing the carnations, as little white as possible should enter into their composition; and they, together with the lights, should be laid on with a fine pencil, and a quick and decided touch, keeping them pure from the preceding colors. Soften all the parts which appear

crude or hard, and finish off the background and draperies. The hands require a flesh tint similar to the face, and the same gray and pearly tints are used for them. If extreme finish be aimed at, you may retouch your work several times, allowing it to dry between every retouching.

Draperies.—The scale of colors is nearly the same as for water; but, instead of gamboge, yellow ocher and ocher yellows are used, and Prussian blue is taken for indigo.

The shades, being laid in, are met by the half tones and lights, and are blended with a softener. The shadows are then finished by glazing, and the lights by scumbling over them.

BACKGROUND COLORS. *Pearly.*—White, vermilion, and blue. White, vermilion, and black. White and black.

Gray.—White, Venetian red, and black.

Yellow.—Yellow ochre and white.

Olive.—Yellow ocher, terre verte, and umber.

Stone.—Raw umber and yellow. Black, white, and raw umber.

Sky.—French blue and white, French blue, vermilion, and white.

Edges of Clouds.—Yellow ocher and white.

Clouds. Indian red, lake, black, and white. Brown madder, French blue, and white.



TO PAINT IN OIL ON SILK, SATIN, ETC.

PAINTING with oil colors on silk and satin has been successfully achieved, but it is more difficult, and the effect is no better than with water-colors. The following is the process : —

Use the best oil-tube colors, either of our boxes.

Squeeze out as much as is required of each color upon a sheet of blotting-paper, and let it remain until the oil is absorbed. The colors should then be mixed with just enough turpentine to allow them to be handled freely.

The groundwork of the design is prepared with Chinese white, the same as for water-color painting. Great care must be taken not to go beyond the limits of the design with the brush, as the oil left in the paint might spread and injure the looks of the material.

PAINTING IN OILS ON WOOD, PLUSH, LINEN, ETC.

For this painting the same colors may be used but they should be thinned with turpentine, as oil is apt to spread. This kind of painting varies from the more delicate style adapted to painting small articles, such as boxes, photograph frames, etc., to the bolder style used in painting screens, panels, etc. For smaller articles, fine, close woods are prettiest, such as cedar, maple, etc. Boxwood or white holly cannot be used, as the oil from the paints spreads upon them. The woods should be thoroughly oiled, to prevent the oil in the paint from spreading. If desired they can be highly polished, which answers the same purpose. All ebonized woods are suitable.

For the smaller articles, sprays of flowers, small figures, birds, and butterflies, are pretty. The design should first be drawn with pencil if the article be unpolished, or out-

lined with ink if highly polished. Designs for every variety of article can be had of the publishers in the form of perforations. (See perforated patterns.) For larger articles, the design on the unpolished wood should be first sketched in with charcoal, and if it is necessary, as in the case of a complicated design, where it would be troublesome to have any details obliterated, should be gone over with ink. But in an ordinary, simple design this is tedious and unnecessary. The painting on large articles is more effective if it is bold, and while working the artist should occasionally leave his work, and, going to a little distance, look at it in that way, as, while close to it, he cannot judge of the effects he wishes to produce. For large articles the most effective designs are bold, decorative flowers, branches laden with blossoms or fruit, tall reeds, flights of birds, and conventional figures. A few suggestions for articles to decorate are here given. Screens, either in many panels (or folding leaves) to be decorated, showing the wood as a background, or prepared with a cheap coat of paint by a house painter, and then covered with a surface of fine oil paints, as in the case of a background of sky, with flying birds, small fire-screens, large panels to be hung on the wall, set in fire-places, or in closet doors, also mirror frames, picture frames,

etc. Old pieces of furniture can be made very charming by having them painted some good color, such as dark olive green, or for a child's room or country house some lighter shade, such as cream white, pale blue, pale olive green, or other light shades, and then painting on the head and foot board of the bed, the front of the bureau, around the glass, on the front of the washstand, on the backs of the chairs, and in many other cases which will suggest themselves, flowers, birds, reeds, grasses, etc. A child's bed is particularly pretty decorated in this way.

TO DECORATE OBJECTS ABOUT THE HOUSE.

FREQUENTLY by a little good taste and a little paint a house may be transformed from an unattractive one to a most charming, original, and cosy place, such as one sometimes sees and wonders over with envy, when the decorations are such as may be adopted and put into practice almost anywhere. Let me remind my reader that there is hardly anything that cannot be made beautiful, and offer a few suggestions. Mantelpieces of white marble, in certain rooms, give sometimes a cold, dreary look that all the mantel decorations in the world will not soften.

Paint the mantelpieces all over with dark paint (house paint), to accord with the paper, olive green, dull red (mahogany color), black (ebonized wood), etc. Fit them up with shelves of wood to match. Over the chimney-hearth, paint great sprays of apple-blossoms or roses on them, and they will be transformed. Paint wild roses up the sides of your windows when you have no curtains, carrying them over on to the upper panes of glass; paint poppies, golden-rod, morning glories, etc., on the panels of your doors; a long panel, running horizontally the length of your mantelpiece, and hung over it, will be pretty. Take common, heavy brown linen, make curtains, portières, splashers, mantel-covers, etc., of it, and paint boldly in oils (mixed with spirits of turpentine) flower designs or birds; reeds and rushes, or fleur-de-lis, will be more appropriate for splashers. Take the little round, metal, dollar-and-a-quarter clocks, paint them whatever color you like, say pale blue, and decorate them at the sides with daisies, wild roses, etc., and they will be charming. Take an unattractive, cheap mirror panel and paint it black (like ebonized wood), and decorate it with golden-rod, or if you have a good glass in a frame too narrow or too much bevelled to paint, let the carpenter make you a broad pine frame, paint

it black, or, in a chamber, white, light blue, old gold, or bright red, and decorate it with golden-rod, roses, birds, butterflies, what you will. The red should be decorated in black, to represent Japanese lacquer, and should have some appropriate designs, such as bamboo, storks, grasses, conventional designs, such as can be found in any cheap Japanese picture or article. The inventive reader can carry out these hints to suit himself, looking about his own home to find the articles to decorate or beautify, and will find them in great variety if he once looks for them.

PAINTING ON LEATHER.

ORDINARY oil paints should be used, diluted with turpentine when necessary. The paint should not be taken very thick upon the brush, and should be laid on smoothly. Camel's-hair brushes are best for this painting. It is like any ordinary oil painting. Portfolios may be decorated in this way with flowers, etc., and are very pretty with a monogram of the owner painted in one corner in colors harmonizing with the flowers. Music-rolls, book-covers, pocket-books, card-cases, etc., may be decorated in this way.

HINTS ABOUT PANORAMA, MAP, AND SCENE PAINTING.



TAKE strong cloth (sail cloth or canvas) of the requisite dimensions, and stretch it on a frame; coat it thoroughly with parchment size,* and when dry apply a coating of common slaked lime, or of chalk with some size with it: when dry it is ready for the design. The colors used for this kind of painting may be had in powder, viz., chalk, (carbonate of lime), vermilion, the two siennas, the two umbers, black, Prussian blue, all the ochres, Brunswick green, emerald green, all the chromes, mineral red, and the lakes. They are mixed with a size made of isinglass, glue, or parchment: bristle brushes of various sizes are mostly used. For extra brilliant effects, leaf silver, Dutch metal, and

* See page 126, for making size.

silver foil are stuck on with oil size in the same manner as for gilding. (See *Gilding*.) This kind of painting is now called "distemper painting." By many persons unacquainted with the process of painting, distemper is regarded as identical with fresco painting. The difference is that *distemper* is painted on a *dry* surface; *fresco*, on *wet* mortar or plaster. A bowl should be had for each color, likewise a brush. The tints should appear a little darker when mixed than what you want them to be, as they dry lighter: wash the brushes in warm water when you wish to clean them.

If the designs require to be painted in oil, the canvas is prepared with the parchment size in the same way; then coat over twice with oil paint, white, then a pearly white. When dry, proceed as with an oil painting.

It should be remembered, in all paintings of this character, that fine and delicate touchings are not necessary; indeed they are not suitable in any way, as they detract from the boldness of the picture, deadening the sharpness of outlines, and giving a tame effect to the whole painting. These pictures are intended to be looked at from a distance, and consequently the lines must be bold,

and the contrasts of light and shade very apparent. To obtain these absolutely indispensable requisites requires practice; and the pupil will notice that those parts which look harsh and coarse when closely examined, are the very portions which give character to the picture when viewed from an appropriate distance. All panorama and scene painting is based on this principle. These remarks are equally applicable to any object which is to be placed at a distance from, or elevated above, the beholder.

TO TRANSFER ENGRAVINGS TO WOOD.

Dissolve salt in soft water ; float your engraving on the surface, picture side up ; let it remain about one hour. Your screen, box, or table should be of bird's-eye maple, or other light-colored hard wood ; varnish with best copal or transfer varnish.

Take the picture from the water, dry a little between linen rags ; then put the engraving, picture side down, on the varnished wood, and smooth it nicely. If the picture entirely covers the wood after the margin is cut off, so that no varnish be exposed, lay over it a thin board and heavy weight ; leave it thus in press over night. If you wish but a small picture in the center of your wood, apply the varnish only to a space the size of your picture. Dip your fore finger in salt and water, and commence rubbing off the paper ; the nearer you come to the engraving, the more careful you must be, as a hole would spoil your work. Rub slowly and patiently, till you have taken off every bit of the paper, and left only the black lines and touches of your picture on the wood, in an inverted direction. Finish up with two or three coats of copal varnish.

ANGLO-JAPANESE WORK.

“This is an elegant and easy domestic art. Take yellow withered leaves, dissolve gum, get mixed black paint and some copal varnish, etc. Any articles may be ornamented with these simple materials — an old work-box, tea-caddy, fire screen, flower pots, etc. Select perfect leaves, dry and press them between the leaves of books, rub the surface of the article to be ornamented with fine sand paper, then give it a coat of fine black paint, which should be procured mixed at a color shop. When dry, rub smooth with pumice stone; then apply two other coats. Dry; arrange leaves in any manner and variety, according to taste. Gum the leaves on the under side, and press them upon their places. Then dissolve some isinglass in hot water, and brush it over the work while the solution is warm; when dry, give three coats of copal varnish, allowing ample time for each coat to dry. Articles thus ornamented last for years, and are very pleasing.”

SEALING WAX TO IMITATE CORAL.



ELT sealing wax of the desired color in first proof alcohol. Spread thickly over a pasteboard, basket, plate, or small waiter. Stir rice, sago, and small bits of tapioca, into the vessel of dissolved sealing-wax ; spread

the same over the basket, etc. ; dry thoroughly. This is pretty for card receivers.

Sealing-wax Painting. — Into twelve large-mouthed bottles, containing about half a gill each, put as many colors and shades of sealing wax. Pour over alcohol, best quality, sufficient to dissolve the wax. Paint flowers, birds, etc., with the same to imitate enameled painting. A friend of ours, who had much skill in painting, received \$60 for a small table painted in this way.

HOW TO CONVERT BROKEN CAKE-COLORS INTO MOIST COLORS.

PUT the broken color into a small cup, and cover with water. Let it remain until the color is dissolved or sufficiently softened ; then get it out and place it upon a porcelain palette or clean plate. Add about one-third of its original bulk of honey to it ; mix it well with a small palette-knife, and put it in one of the porcelain pans : when the water moisture has evaporated, it is ready for use.

DIRECTIONS FOR CUTTING OUT PAPER ORNAMENTS.

PROCURE several tints of tissue-paper of delicate colors, such as pink, blue, green, yellow, and white. Decide upon the size and shape you wish your subject, whether round, square, or oval.

For example : We will suppose it to be a circle the size of an ordinary plate. Draw out your circle with compasses, or from your plate, upon the tissue-paper.

Double it over and over four times, in such a way as to make your paper assume the shape of a cone one-eighth of a circle. Now cut a piece of white letter-paper exactly the same size as one-eighth of a circle, and upon it draw a single design with pen and ink, observing that each figure should be separate. When complete, place it carefully inside the first division of your folded paper. You can now trace the pattern with lead-pencil on the tissue-paper. That being done, remove your original pattern, and commence cutting out the parts you have marked with a pair of embroidery scissors. When you have cut them all out, unfold your paper, and you will have your pattern repeated eight times; and, when done neatly, it has a pleasing appearance. If it is not all you desire, try again. A few trials will make you perfect.

The paper ornament, when finished, may be used as a mat-stand, scent-bottle, or pincushion, or to place upon a dessert plate.

This style of paper-cutting may be used for many purposes that your own ingenuity may suggest.

DIRECTIONS FOR BRONZE STENCILLING.

PROCURE papers of three or four different kinds of bronzes, — white, gold, copper, and salmon. A bottle of gold-size, a flat camel's-hair brush, penknife, and a flat piece of tin six or eight inches square. Make a rubber of a bit of soft leather, with soft cotton inside. Tie it with thread, so as to keep it in shape.

Draw the subject you want on thin, strong writing-paper. Whether flowers, figures, houses, letters, or scroll ornament, place the paper with your drawing on the tin, and commence cutting out with the point of your penknife, leaving a little band, now and then, to hold your design together. With a little practice this can be done very neatly. Your design being ready, coat over any article you intend to decorate.

For an example, we will take a little fancy table that has been varnished or coated with oil-paint. Wash it well, so as to free it entirely from grease. When quite dry, coat it over evenly with gold-size with the flat brush. Allow it to dry about twenty minutes ; then get all your bronze papers open ; place your design on the

part coated with gold-size. Charge your leather rubber well with the desired bronze, and rub gently the bronze on to the stencil. Great care is requisite in rubbing on the bronze, or you may break some of the delicate bands that hold together your design. The bronze readily adheres to the sticky property of the gold-size.

If desirable, you can stain with transparent color what you have stencilled. In that case you must allow it to dry a few days, and use the same colors as directed in Oriental painting.

FOR USING ORDINARY ENGRAVINGS OR PRINTS UPON GLASS.

THE engravings or prints used for this purpose should be on paper that contains little or no size; and those answer best that are strongly printed.

Lay the print flat, and damp with sponge and water the plain or unprinted side. Apply a generous coating of transfer-varnish on the glass. Place on the print face to the glass; then press with the roller, as before directed in the article on diaphanie; and, having satisfied yourself that no air-bubbles remain between the face of

the print and the glass, lay it at some distance from the fire to dry.

Damp the back of the print again with water, and commence rubbing off the superfluous paper. This must be done with care, or the face of the print will be injured.

When you have removed sufficient of the paper, and allowed the moisture to dry, apply with the camel's-hair brush the clearing-varnish.

If you wish, you can stain some of the parts with varnish-color, as used in oriental. Afterwards varnish all over with copal-varnish.

IMITATION OF INLAYING WITH EBONY.

PROCURE any article that is made with holly-wood or any other light-colored wood. Trace neatly with lead-pencil any design you wish, and proceed to outline the same with your crow-quill sable. Afterwards fill in all the interstices with lamp-black.

The designs for this style may be as simple or as elaborate as for any style of decorating; and any one who has a steady hand for outlining can accomplish it.

We will suppose, for example, that you only want a border composed of ivy-leaves. Sketch in your pattern with your crow-quill brush charged with black. Vein the leaves, and leave all the connecting-stems white. Fill in to the width of your border with black.

The same design may be reversed, which is much easier to do for a border. In this case, pencil in your leaves with black, leaving the veins white; the connecting-stems do with black. Make your black smooth and solid, even if you have to go over two or three times.

Chinese designs, with figures, buildings, birds, trees, flowers, &c., look very well in this style, on small tables, folio, and book-covers; indeed, this style can be applied to advantage on any article that is made in light-colored wood. I once saw a complete toilet-set ornamented in this style, chairs and bed included.

The articles required are a pan of lamp-black; two sable brushes,—one a crow-quill sable, with the hairs five-eighths of an inch long; the other a duck or goose-quill, according to the spaces you have to fill in.

After finishing your design, if the article is one that will be handled much, it is better to give it a coat or two

of copal-varnish. If two, allow the first coat to dry a couple of days before applying the second.

The reason for varnishing is, the lamp-black is water-color ; and, if any moisture gets upon it, it would smear and spoil the effect of your work.

If you are an oriental-painter, and have the requisites for that style, you can use your lamp-black mixed with varnish, in place of using water-color.

To those who have painted papier-maché, and are familiar with varnishing, if they wish they may put an extra finish upon their work by giving it two coats of varnish as before directed, and then following the directions for polishing as mentioned on page 202.

DIRECTIONS FOR CLEANING BRUSHES.

ALWAYS leave your brushes clean. For water-color brushes, Indian-ink, and sepia, wash them in 'clean water.

Brushes that are used in alcoholic varnishes, such as spirit-sandarac, cabinet, varnish for pearling, preserving-varnish, and Grecian varnish, should be washed in alcohol.

All brushes used in oil painting, oriental and papier-maché, and turpentine varnishes, such as transfer-varnish, antique varnish, mastic, and copal, should be washed in turpentine, and afterwards with soap and warm water. Attention to this, and your brushes will always be in working order, and will last a long time ; but if neglected, and the color or varnish is allowed to remain in, they soon spoil and get ruined.

IMITATION OF GROUND GLASS.

TAKE one part of flake-white ; add two parts of sugar of lead ; mix with equal parts of oil and turpentine. The color must be used thin, and applied with a painting-brush of moderate size. Then, with a painter's duster or badger, clean and free from dust. Commence gently dabbing the glass with the ends of the hair until your work acquires uniformity of appearance. This will wear a considerable time, and it may be washed with weak soap and water if necessary ; but, should you require to repaint it, the first may be removed with very little labor by applying with a sponge a solution of potash.

Another method, more simple : Get some putty ; prepare it in a round ball, and dab over your glass evenly ; let it dry a couple of days, then repeat it. If evenly done, it looks well, and answers every purpose for which ground glass is used. If you should require to remove it, it may be done with very little trouble, by applying, with a piece of sponge or cotton, oil of tartar, or solution of potash.

TRACING PAPER.



ET a sheet of fine tissue paper, and rub it all over thinly with clarified linseed oil, when it will be quite transparent; hang it up to dry; it takes some time to dry, but it must be allowed to dry thoroughly before using it, or it may spoil the picture or engraving you trace from. With this kind of tracing paper, being transparent, you have merely to place it over pictures or engravings, and with a lead pencil mark over your drawing with a steady hand.

SPIRIT SANDARAC VARNISH.

Six ounces of pulverized sandarac, two ounces of pulverized shellac, four ounces of pulverized resin, four of turpentine, thirty-two ounces of alcohol; let the vessel you make it in be surrounded with warm water, gradually made hot; when all the gums are dissolved, strain, and in a few days it will be ready for use. Good for varnishing any thing that is wanted to dry quickly.

TRANSFER VARNISH.

To six ounces of fir balsam add twelve of rectified spirits of turpentine; shake well together; strain if requisite, and it is ready for use. Good for transferring engravings, and holds the ink firmly; is sometimes used for varnishing maps, engravings, etc.

MASTIC VARNISH.

Dissolve (without heat) six ounces of bruised mastic in twelve ounces of rectified spirits of turpentine; when dissolved, strain it into another bottle, cork it, and place it where the sun will strike. After a time there will be a precipitate; then put it in another bottle clear. This is a good varnish for maps and engravings.

ANOTHER. — Six ounces of 95 per cent. alcohol; six ounces of mastic; fourteen of turpentine. Likewise good for engravings, maps, etc.

HOW TO MAKE TRANSFER PAPER.

Take any opaque color, and mix it with a very weak solution of gum water. The opaque colors best for this purpose are Indian red, yellow ocher, chrome yellow, and white. When mixed, coat it over thin drawing paper, with a flat brush; when dry, it is ready for use. It is very serviceable to transfer your sketch made on the tracing paper; for oil pictures, for instance, when you have made your sketch on the transparent tracing paper, place your transfer paper, the color side to face the canvas, fit on your trace, and mark all your drawing with a bone tracer, or with the point of your sharpened pencil stick, when a very legible outline will be transferred to the canvas, of whatever color your transfer paper is. Of course you will choose a color that will show; chrome or yellow ocher shows quite sufficiently on light-colored canvas. After removing your paper, it is well to mark over on your canvas with lead pencil.

In making the transfer paper, be careful not to put too much gum in, or the color will not leave so freely as is requisite for tracing.

ANTIQUE VARNISH.

This receipt has never before been given, although large sums have repeatedly been offered for the secret. All other receipts are worthless, and no other preparation will stand the test of time, as this has done.

Take one ounce of pure Venice turpentine; mix well with two ounces of pure spirits of turpentine; warm in a large bottle. In another bottle put four ounces of best fir balsam, (*it must be pure,*) with two ounces of 95 per cent. alcohol; shake well each bottle frequently for six hours or more, then mix both preparations in the large bottle. The whole should stand several days before using, in a warm place.

CABINET VARNISH.

To one gallon of alcohol add six ounces of gum sandarac, three ounces of gum mastic, one half ounce turpentine varnish; put all in a tin can, and in a warm place, occasionally shaking. Twelve days or so will dissolve the gums. Strain, and it is ready for use. This varnish is good for any sort of wood work, violins, etc.

TURPENTINE VARNISH.

To one gallon of oil of turpentine add five pounds of powdered resin; boil for thirty minutes; strain it; when cold, it is fit for use.

PAPIER MACHE VARNISH FOR PEARLING.

Take one quart of the spirit sandarac varnish, mix in three ounces of lampblack, and one ounce of Prussian blue; blend them together, and it is ready for use.

TO VARNISH COLORED ENGRAVINGS, CHARTS, MAPS, ETC.

Make a frame stiff and strong, similar to those used for canvas in oil painting, except it better be secured at the corners. Then procure cotton cloth two inches larger than the frame all round; this paste well on one side with strong binder's paste; also paste the picture or map, which should lay a few minutes to become moist throughout, and place the pasted sides together, (the cloth and paper,) and rub with a bone folder, commencing at the middle, out to the corners, that it may not wrinkle. The assistance of a second person would be desirable to hold up the corners until you are prepared to smooth as directed. Before this is dry, tack with lace tacks to the frame evenly; when it dries it will become very tight and smooth.

After the whole is thoroughly dry, take a piece of isinglass, say three inches square, break in small pieces and pour on hot water, about a small cup full, and keep it hot till the isinglass is all dissolved, and while the solution is warm, with a flat camel's hair brush, coat the face of your picture evenly, avoiding as far as possible touching a second time (particularly if it is colored) till the first is dry. Be sure that every part has received a portion of the size. When dry varnish with Outside, or Mastic varnish.

RECEIPT FOR MAKING GOLD SIZE.

Take one pint of boiled oil, and three quarters of a pound of litharge; boil them together for three hours, occasionally stirring it up; when cold, let it settle for a few days, pour off the clear liquid, and it is ready for use.

TO STRETCH ENGRAVINGS FOR FRAMING.

Prepare them as already directed. Pictures much soiled may be washed in clean water, and with blotting or other porous paper the superfluous water absorbs the dirt; they may be then stretched, and be made to look as smooth and fresh as new.

TO CLEANSE CABINET WORK.

An excellent method is, in the first place, to saturate the surface with pure olive oil, and then apply a solution made by dissolving gum arabic in boiling alcohol. This will give to the furniture a most brilliant appearance.

Another mode is to dissolve a pound and a half of potash in a gallon of hot water; then add a pound of virgin wax, and after boiling it for half an hour, allow it to cool, and the wax will rise to the surface. Put the wax into a mortar, and work it with a marble pestle, adding soft water until it becomes of the consistency of soft paste. Lay this on the furniture, and rub it carefully, when dry, with a woollen rag, and a beautiful brilliancy is soon obtained.

SPATTER WORK.

Select the pattern of leaves, ferns, or other design, according to fancy, and affix to the surface of the material which is used, by means of fine needles thickly placed, and closely securing every part of the pattern, so that the edges leave no space between the pattern and the material. Mix India-ink with water in a thin paste. Dip a tooth-brush in the mixture, and, holding the saturated brush over the work, quickly draw the teeth of a fine comb over the brush, repeating the operation until the surface is com-

pletely spattered as desired. When thoroughly dry, remove the pattern; and it will be found in relief tastefully set off by the spattering.

Very coarse spatter is made by using the brush without drawing a comb across.

All kinds of holly-wood ornaments, tidies, velvet cushions, etc., may be ornamented by spatter work.

GRECIAN VARNISH.

Take three ounces of fir-balsam, two ounces of ninety-five per cent. alcohol, and one ounce of rectified spirits of turpentine. Shake well together; strain, if requisite, and it is ready for use.

CLEAR VARNISH SUITABLE FOR ENGRAVINGS, &c.

To six ounces of fir-balsam add twelve ounces of rectified spirits of turpentine. Shake well together; strain, if requisite, and it is ready for use.

PRESERVING-VARNISH.

To half an ounce of shellac add one pint of ninety-five per cent. alcohol. Let it remain two days, occasionally shaking it. Pour off from the sediment, and it is ready for use.

MATERIALS.

THE reader has been referred to the chapter on materials frequently in the foregoing pages, as it was originally the intention of the editor to give full lists of all articles, (with prices), required for doing the different kinds of work described and taught by us, but it has been found that changes, both in prices and materials, are so frequent that a price-list made for to-day may be far from correct in a less time even than six months. For this reason, instead of giving a general price list here we would suggest that the reader send directly to Messrs. S. W. Tilton & Co., Boston, for price lists, and late information on such subjects as they may be interested in. All such communications, inclosing a stamp for reply, will receive prompt attention.

As success in the practice of the instructions which we have given will largely depend upon the materials used, the publishers of this book have made a careful study of the subject, both as to quality and prices. And while, as a general rule, the best results will follow the employment

of the best materials, it does not always follow that it will be necessary in all cases to begin with the highest cost implements, especially when less expensive articles may be had which will answer every purpose while one is learning.

For instance, take water-color painting: the ten colors contained in Tilton's Decorative Art Box, separately and by mixing will produce any color required, and may be had for fifty cents, while the colors usually recommended by teachers would cost from three to five dollars.

In comparison of work done from these two boxes it would require an unusually skilful expert to determine which were the better, and for this reason we can safely recommend Tilton's Decorative Art Box to all beginners.

The same principle will apply to brushes. A *good* sable brush is undoubtedly the best for water-colors, but as a number seven sable brush, (a very good size for a beginner) will cost \$1.60, and a camel's-hair brush twenty-five cents for the same size, the latter will answer the purpose for a *beginner* quite as well as the more expensive article. After one becomes skilful with brush and colors, he will find a certain satisfaction in using the best and highest cost articles which can be obtained.

ON THE SELECTION OF COLORS. If an art student should procure from a dozen different teachers or artists a list of the best colors for a beginner, he would probably find upon examination that no two lists would be precisely the same. This frequently is a puzzle, the solution of which is, there are many methods for producing the same results — and if these twelve artists or teachers who have given lists understand their profession, each one of them will probably be able to produce the same result from his list that the others will from theirs. All colors are produced from a union of blue, red, and yellow in different proportions; and if these three colors could be obtained pure the artist would require no others. But as this is not the case, other colors must be employed — this is all explained at length in “Artist Colors, and How to Mix Them.” In the face of evidence which proves so many different methods for producing comparatively the same result, we will not claim that the lists which we offer are absolutely the best. We only claim that the colors which we have offered are more generally used than any others. This we have learned by collecting many lists from artists both in this country and England and comparing them. In this way, we have found that a certain pro-

portion of the colors in our lists are used by all, others by nine out of every ten, and so on. If the reader will make water-colors the basis of his study, as we have recommended, we would advise his trying all of the colors, which he may do at comparatively slight expense if he uses the grade suggested for beginners—and then use those colors from which he can obtain the most satisfactory results. All will not arrive at the same conclusion. Some will do better with one list, others with "another. (See page 99 for our list of ten water-colors, as well as for a list of all the colors of this grade.) These colors are nearly all transparent, and while this is desirable for producing certain effects in water-color painting, it would not be desirable in Oil Colors, for which a different list will be required; for instance, gamboge, which is one of the most valuable colors for water, is scarcely used at all as an oil color.

What we have said on the selection of water colors, will apply equally well to oils. In this case, of the list of ten, the first eight are used by nearly all artists, the other two, *viz.*, Chrome Yellow and Crimson Lake, are not so generally used and are given on the ground of economy, as they will cost only about a quarter as much as Madder

Lake and Cadmium, which are the better colors; these last two are only better because they will be permanent — that is, retain their color while Chrome Yellow and Crimson Lake are not permanent, but will change and perhaps disappear. To a beginner in Oil painting who is practising for immediate results rather than posterity, this will not be a matter of great consequence, but if he prefers to have the better colors he may do so by paying the difference in price.*

Cobalt is also a color found on the palettes of nearly every artist, but as it is an expensive color and not absolutely necessary, we have not included it on our lists. It is not used in place of Permanent Blue, but in connection with it. Permanent Blue mixed with Emerald Green will give a good imitation of Cobalt.

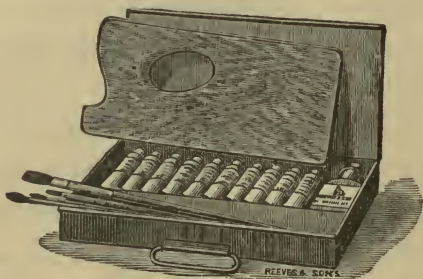
One set of Oil colors will answer for every purpose calling for such. And the same with water-colors. Different brushes may, however, be required for different kinds of work.

The cheapest and most compact oil-color box offered by Messrs. Tilton & Co., is their pocket sketching-box. This is a well-made japanned tin-box, containing a palette, four

* Which will be 82 cents.

bristle brushes, a tube of drying-oil, and the following ten colors:—

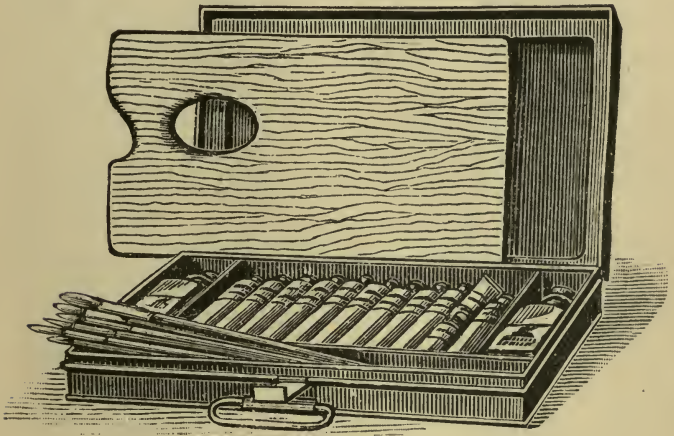
Flake-White, Ivory-Black, Vermilion, Yellow Ochre, Raw Sienna, Burnt Sienna, Vandyke Brown, Permanent Blue, Chrome Yellow, Crimson Lake, the price of which is \$2.00, or if a Palette Knife is added, the price will be



No. 50. Pocket Sketching-Box.

\$2.25. They also have larger and higher-priced boxes, as will be seen by their list, which will be sent to any address on application. See cut of No. 51, on opposite page. This box contains the above ten colors, and also Emerald Green and light Red, six brushes, drying oil, and Spirits of Turpentine. The price is \$3 with American colors and \$4 with English colors. These twelve colors, separately and by mixing, will produce any color required. Directions for mixing accompany each box.

The cost for materials required to begin the study of any branch of decorative art work, if the pupil will confine himself to what is only absolutely necessary, will be slight and within the means, we think, of all who come to this book for information. A list of the articles required will generally be found with the instructions for doing the work.



No. 51.

In sending to Messrs. Tilton & Co. for materials, or in buying goods bearing their name, the purchaser may rely upon obtaining articles especially adapted for the work at the most economical prices.

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